1959

Journal

OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION

Kansas City Meeting

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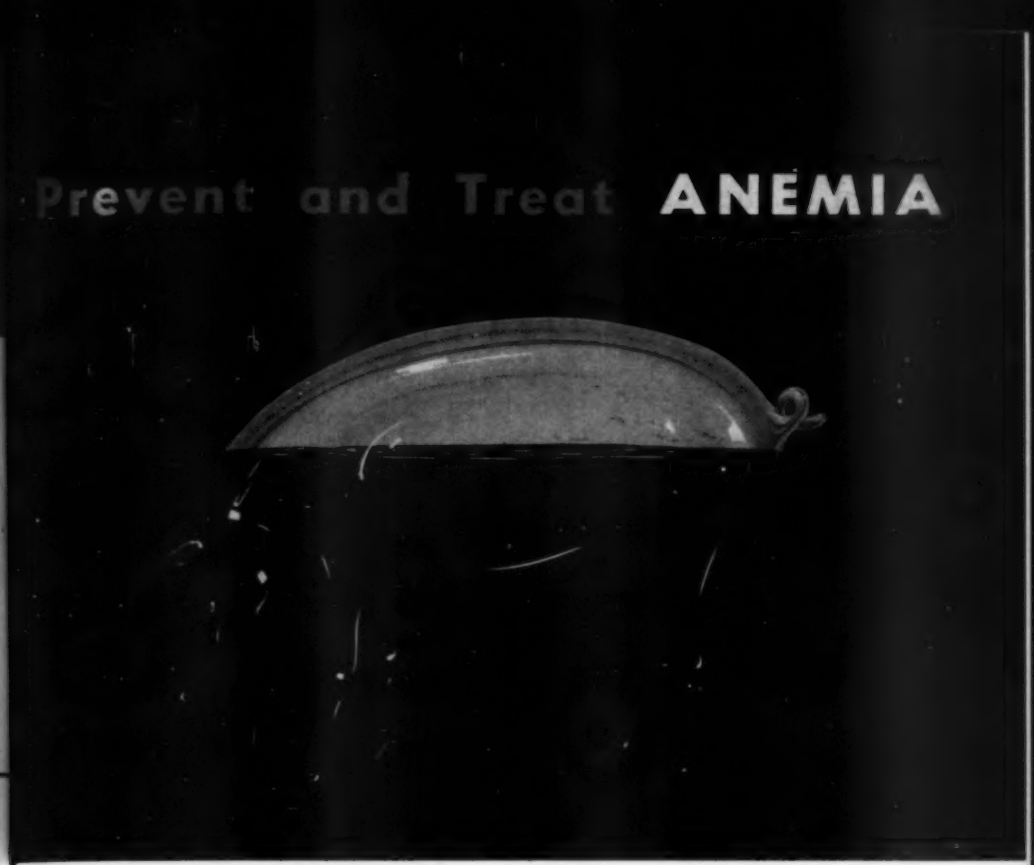

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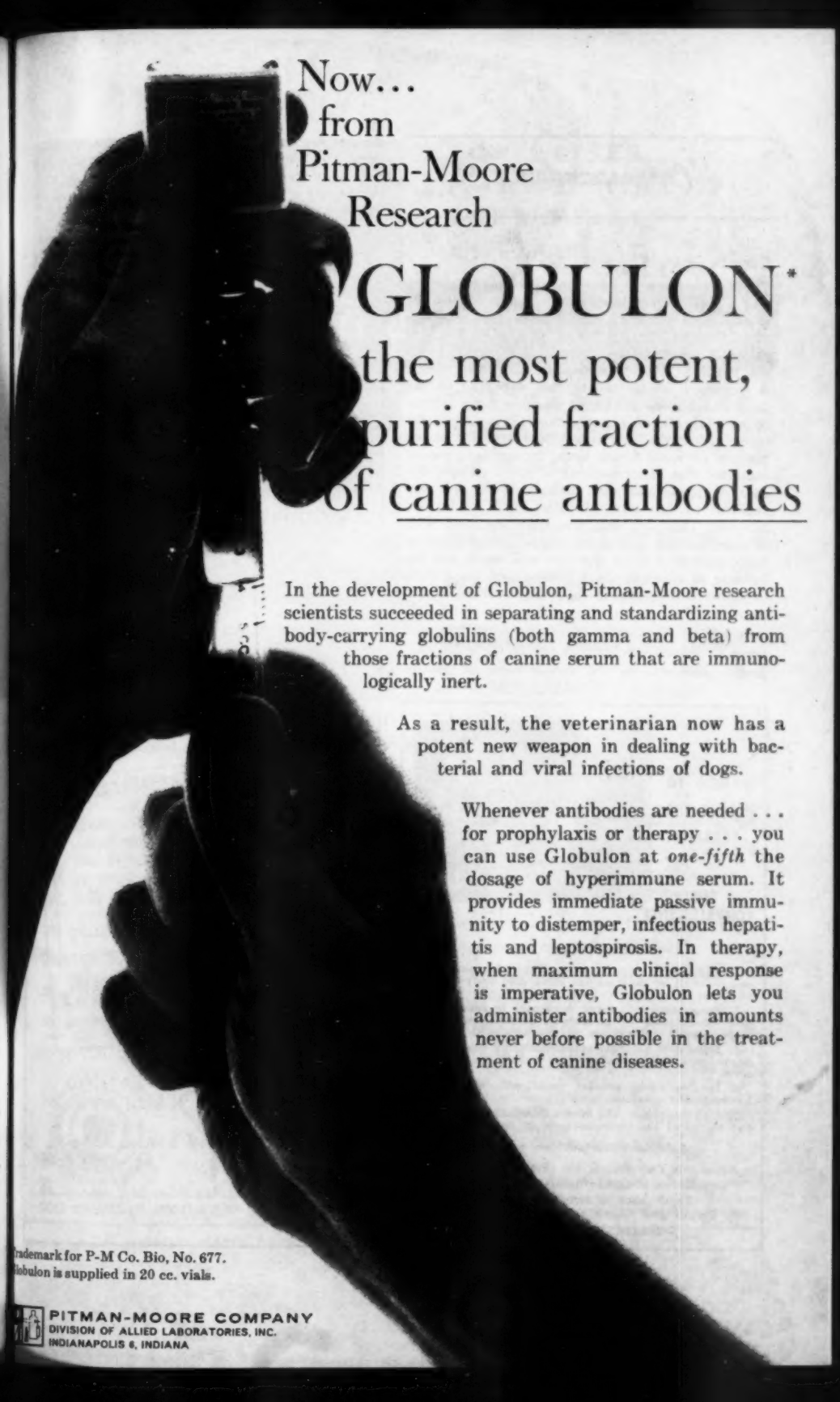

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Correspondence

August 24, 1959

Dear Dr. Price:

For some time I have been planning to drop you a line with reference to a paragraph in the clinical data material published in the April 15, 1959 issue of the JOURNAL of the AVMA. On page 376 of that issue there is a paragraph with the heading "Histoplasmosis in man from fowl". A summary of an article that appeared in the American Review of Tuberculosis is given wherein an outbreak of histoplasmosis in a family occurred after the individuals had spread chicken manure on some flower beds. Present information indicates that histoplasmosis is not a natural disease of fowls and that, indeed, fowls are very resistant to this type of infection. It is known, however, that soil that has been fertilized with chicken manure is a good source for isolation of the organism. I think that you will agree that the heading as given in the JOURNAL of the AVMA is rather misleading. I make this point because only too often veterinarians and public health officials are quick to make note of such an item and point to domestic poultry as one of the more dangerous elements in the transmission of human disease. In only too many instances such allegations are not proven and are inferences drawn from improper interpretations. I am perfectly willing to call a spade a spade but I'm definitely unwilling to call it a steam shovel!

Very sincerely yours,
s/P. P. LEVINE
Ithaca, N.Y.

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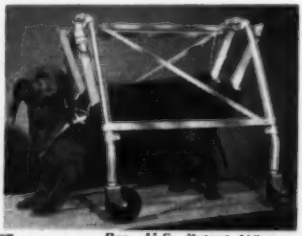

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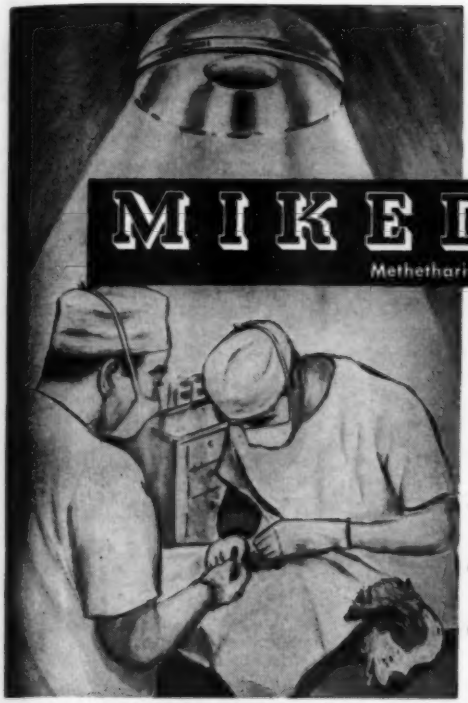

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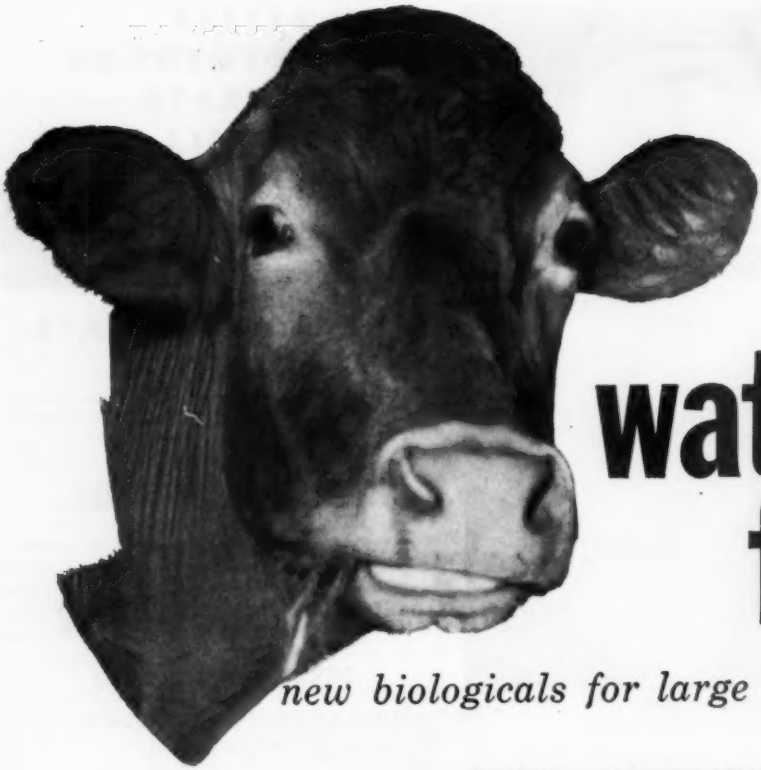

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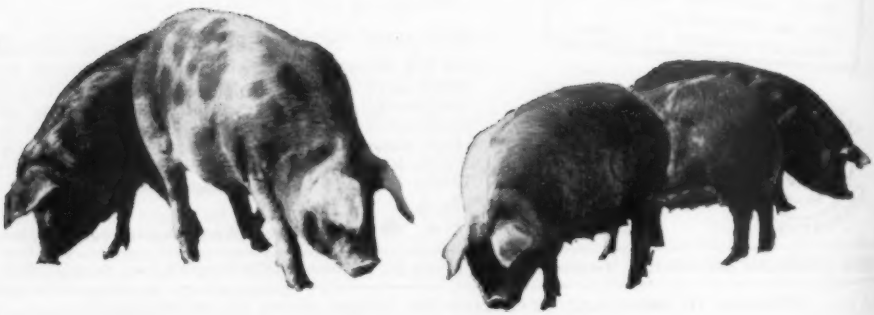

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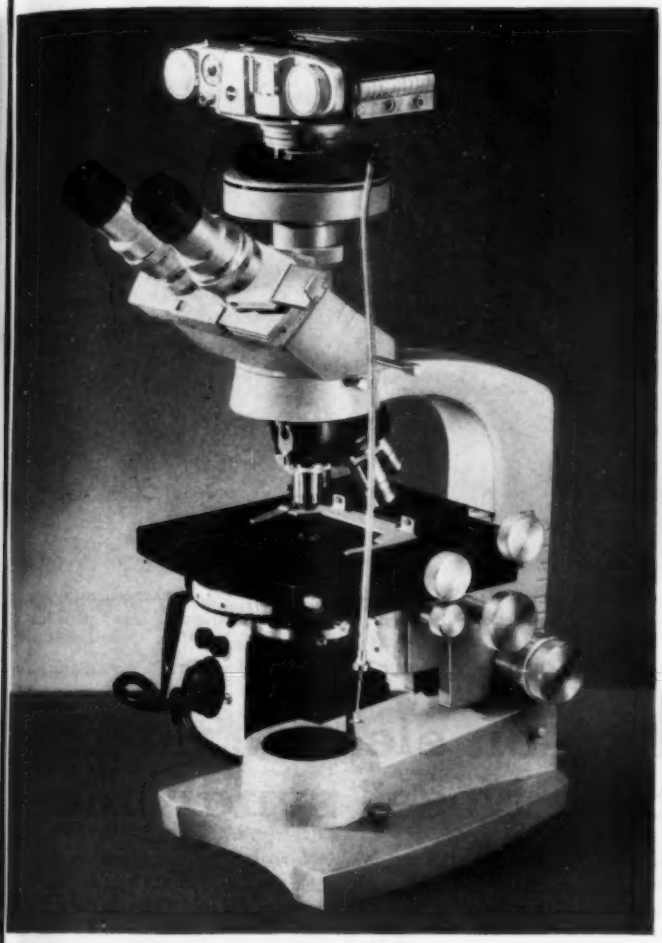

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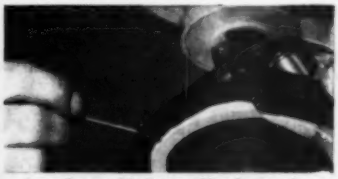

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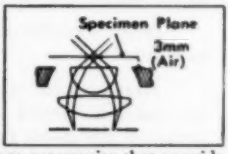

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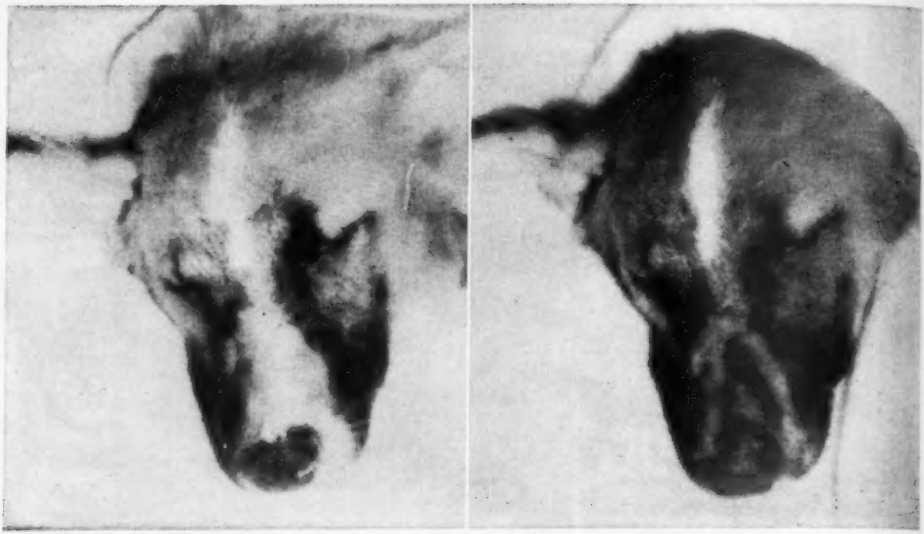

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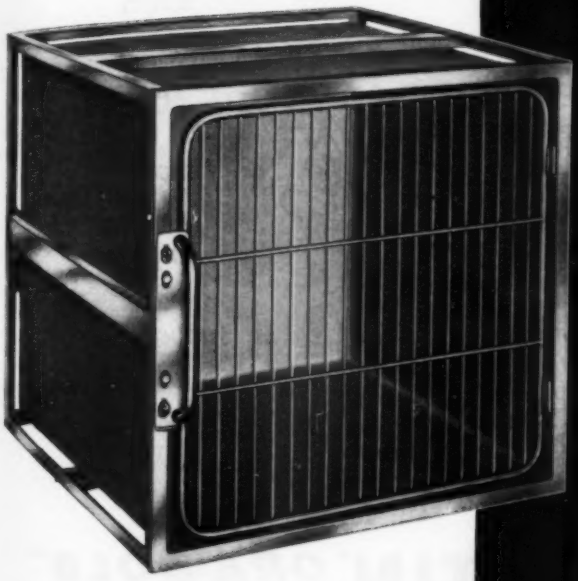

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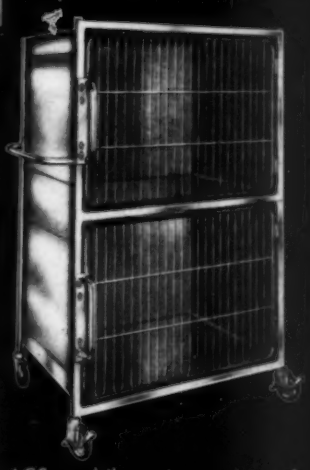

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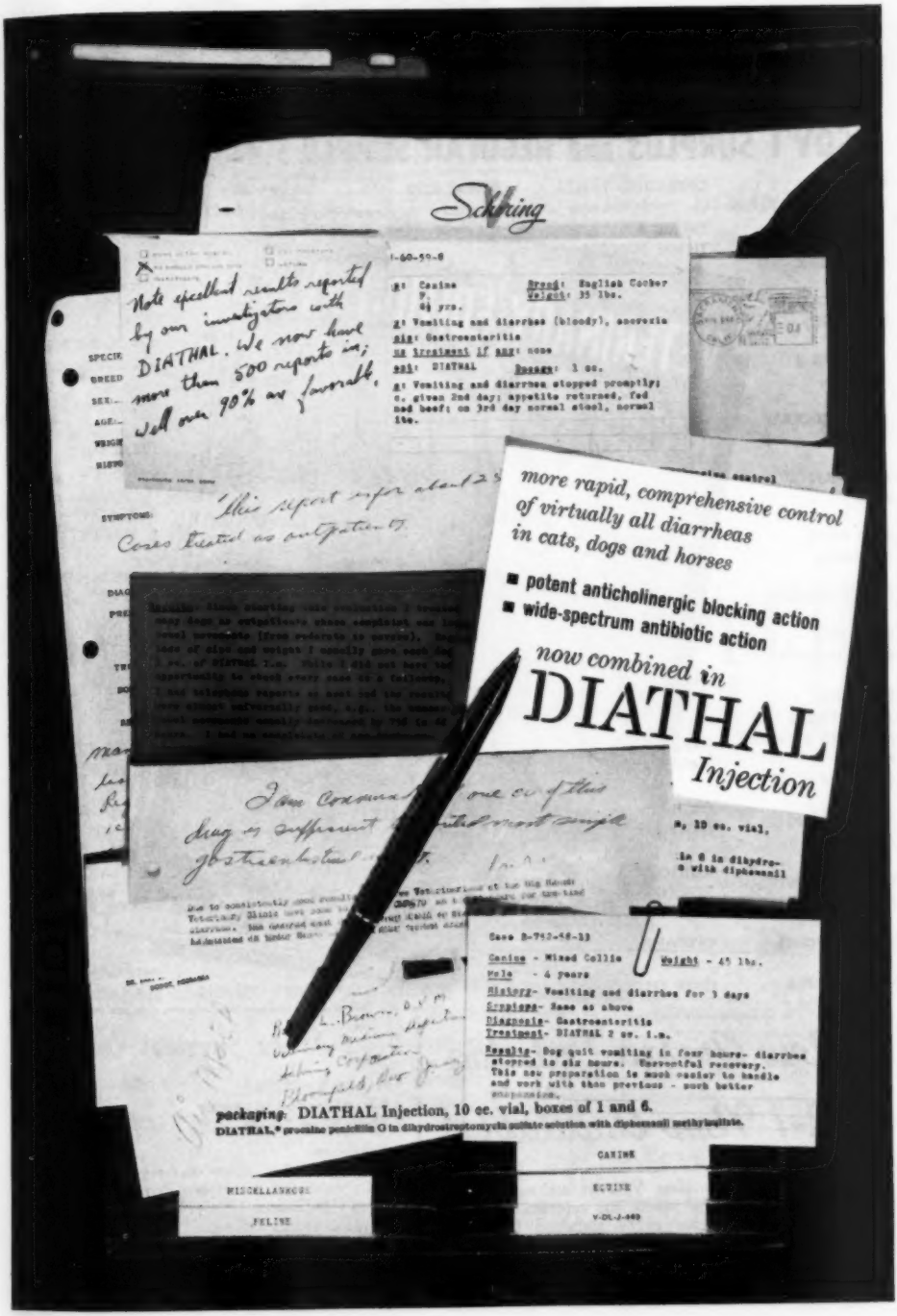
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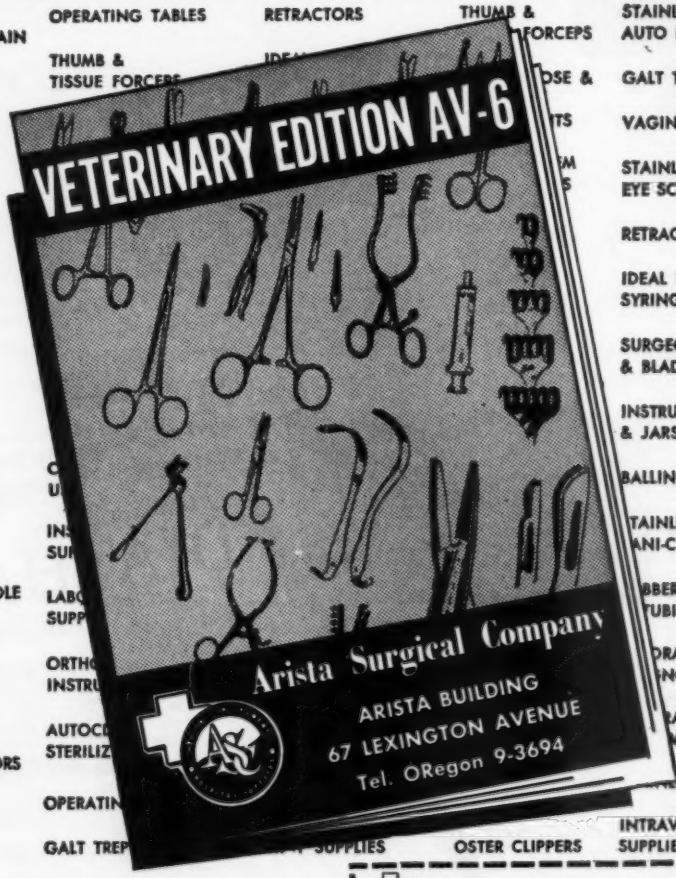

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1. Mires, M. H., and Chadwick, R. H.: Vet. News **10**:3 (Jan.-Feb.) 1947. 2. Mires, M. H.: J. Am. Vet. M. Ass. **117**:49 (July) 1950.

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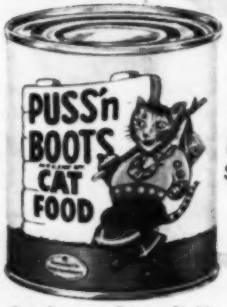

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news from Washington . . .

FROM THE AVMA WASHINGTON OFFICE

LEGISLATIVE

Fiscal Appropriations, 1960

Appropriations for fiscal year 1960, Departments Labor and H.E.W. (P.L. 86-158) total $4,016,485,981. Food and Drug Administration received $13,800,000, a budgetary increase of $2.9 million granted by Congress. Latter will permit creation of 348 new positions, provide funds for additional laboratory and clinical studies into the safety of proposed new drugs, and will make for more frequent inspections of manufacturing and processing plants under its jurisdiction. Among funds provided for P.H.S. activities: general research and services, National Institutes of Health, $45,994,000; construction of small animal quarters at Rocky Mountain Laboratory, Mont., $150,000; research facilities construction and acquisition site for large animals, $150,000.

Wild Horses-Burros Bill

Wild Horses-Burros bill, H.R. 2725 (see JOURNAL, Sept. 15, 1959, adv. p. 16), cleared for the President on August 25.

Pan American Health Organization

Senate cleared for House action S.J. Res. 115, authorizing the conveyance of certain D.C. property to Pan American Health Organization at its headquarters site.

Favorably Reported by Committees: Government Employees Health Benefits

S. 2162, as amended by the House Post Office and Civil Service Committee (H. Report 957), passed the House September 1. Enactment is expected early in September following Senate approval.

P.H.S. Commissioned Corps

S. 2220, to strengthen the P.H.S. Commissioned Corps (see JOURNAL, Sept. 1, 1959, adv. p. 12), was reported by the House Interstate and Foreign Commerce committee on August 20.

Marketing of Hogs and Pork Products

H.R. 8394 as amended (see JOURNAL, Sept. 15, 1959, adv. p. 16) was favorably reported by the House Agriculture committee on August 20.

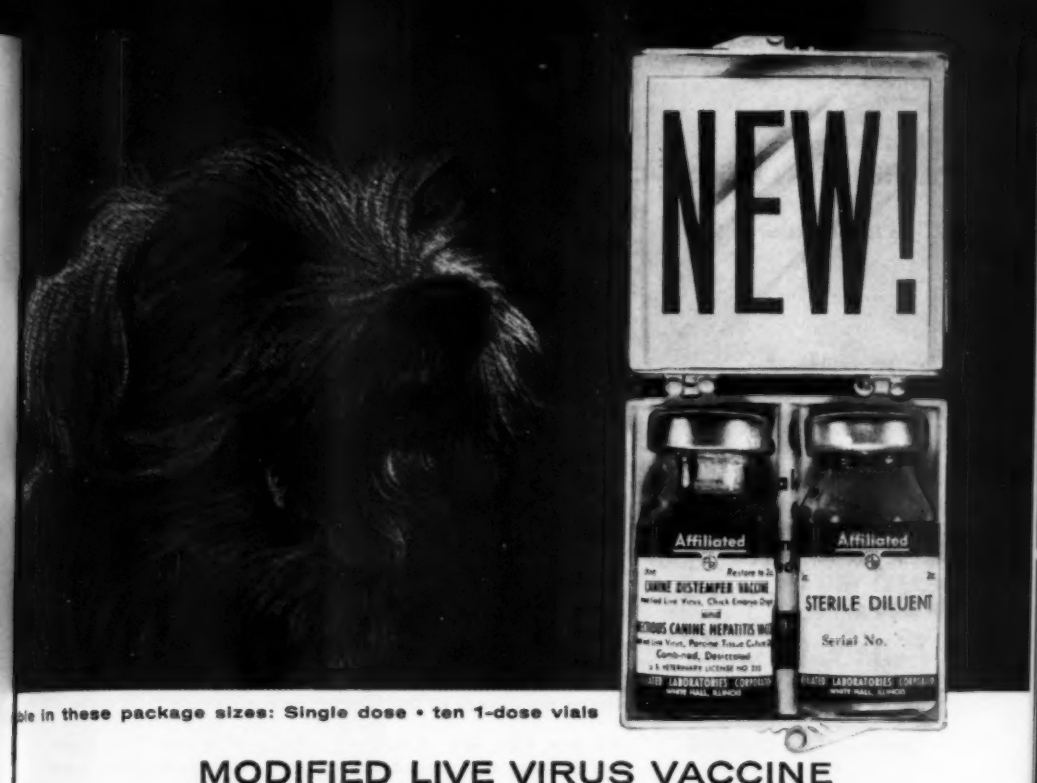
Effects of Insecticides

H.R. 5813, to undertake continuing studies of the effects of insecticides upon fish and wildlife, was reported by House Merchant Marine and Fisheries committee on August 19.

Color Additives Amendment of 1959

Senate Labor and Public Welfare committee reported S. 2197 with amendments (S. Report 795), on August 21. To authorize the use of suitable color additives in or on foods, drugs, and cosmetics, in accordance with regulations prescribing conditions under which such additives may be safely used.

(Continued on adv. p. 24)



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Modified live virus, Chick-embryo origin

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Modified live virus, Porcine tissue culture origin—desiccated

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Affiliated Brand Canine Distemper Vaccine, Modified live virus of chick embryo origin, and Infectious Canine Hepatitis Vaccine, MLV of Porcine tissue culture origin, is a combined vaccine containing attenuated strains of Canine distemper virus and Infectious canine hepatitis virus. A single injection of 2 cc induced immunity to challenge of virulent distemper and hepatitis viruses.

For added safety, the attenuated Infectious canine hepatitis virus is cultivated on porcine kidney cells (unnatural host). As a result, it does not reverse to virulence, even on several serial passages on dogs, and is free from viruses pathogenic for dogs.

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WASHINGTON NEWS—*Continued*

No Further Action on S. J. Res. 41

Rep. Harris, Chairman of Interstate and Foreign Commerce Committee announced August 28 that the committee will not take further action this session on S.J. Res. 41, International Health and Medical Research (see JOURNAL, June 15, 1959, adv. p. 12). Chairman Harris pointed out that testimony revealed a number of points at issue requiring further clarification, and an effort would be made during recess to clarify these.

NEW BILLS

Air Pollution Control

S. 2556, Sen. Neuberger (D., Ore.), to extend indefinitely the provisions of federal air pollution control law, and to give the Surgeon General and the Secretary of H.E.W. certain additional authority.

Pesticide Label Declarations

S. 2602, Sen. Holland (D., Fla.), to amend Federal Food and Drug Act with respect to label declaration of the use of pesticide chemicals on raw agricultural commodities which are the product of the soil.

Health Benefits Program, Retired Federal Employees

H.R. 8788, Rep. Rhodes (D., Pa.), H.R. 8826, Rep. Thompson (D., Texas), to provide health benefits program for certain retired employees of the federal government.

National Farm-City Week

H.J. Res. 482, Rep. Cooley (D., N.C.), S. J. Res. 125, Senators Ellender (D., La.), Aiken, (R., Vt.), designating the week of November 20-26, 1959, as National Farm-City Week.

Second Class Mail Subsidies

H.R. 8603, Rep. Reuss (D., Wis.), would place annual limitation on publishers' second-class mail subsidies.

Veterans Pensions

S. 2542, Sen. Kefauver (D., Tenn.), to increase the annual amount certain veterans would be permitted to earn without being deprived of their pensions.

Health Research Postage Stamp

To provide for issue of a national health research stamp for support of National Institute of Health: H.R. 8557, Rep. Dulski (D., N.Y.). Would be special postage stamp of distinctive design, denomination four cents plus two cents surcharge.

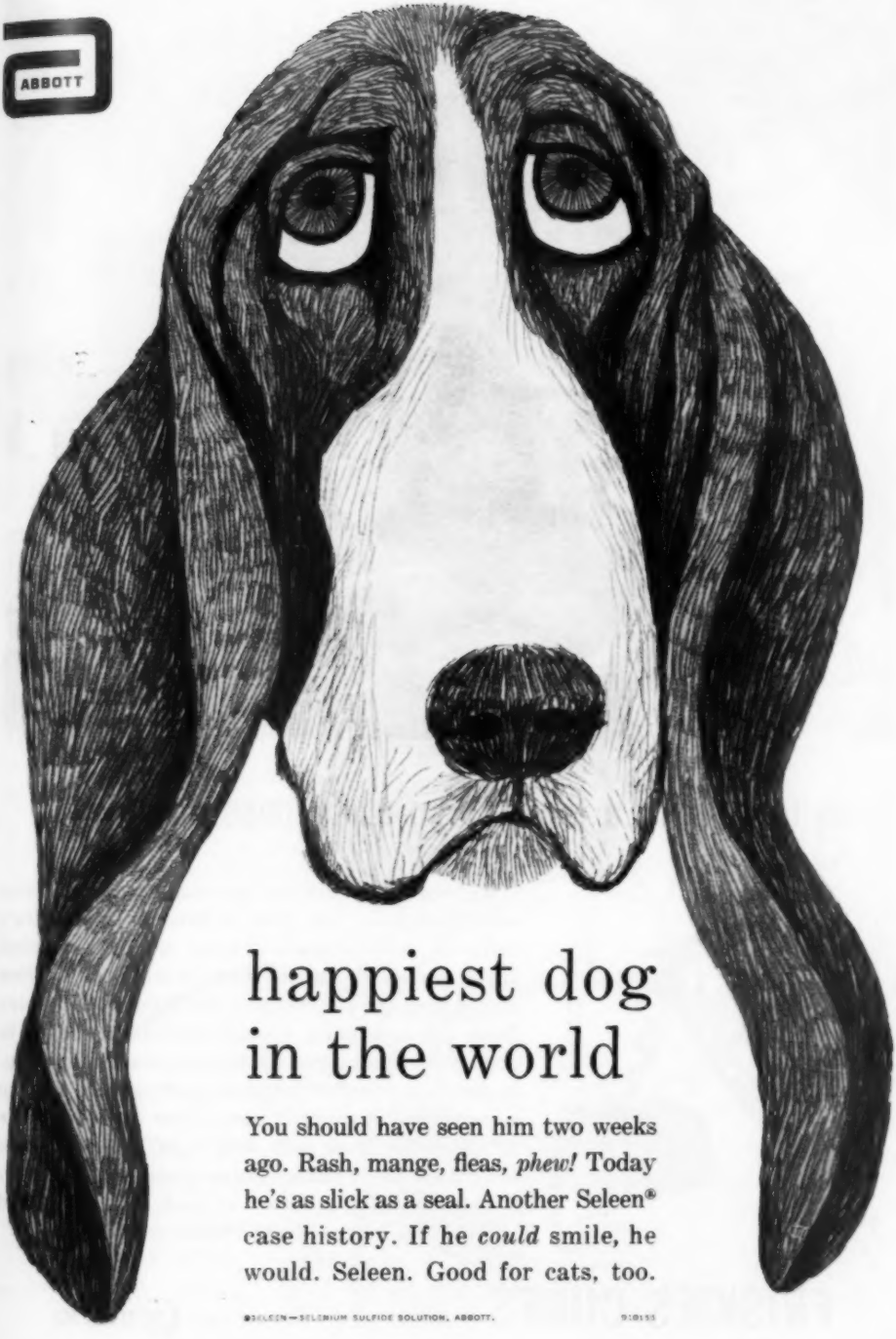
Colonel McNellis Announced Chief, V.C.

Colonel Russell McNellis was designated as Chief of the Veterinary Division, Office of the Surgeon General, and his appointment as Chief of the Veterinary Corps, U.S. Army, was announced officially September 1, 1959, by Vice-Brigadier General Elmer W. Young, V.C. (Ret.). The promotion of Colonel McNellis to Brigadier General is expected to follow shortly, having been certified for that grade by Secretary of the Army, Hon. Wilber M. Brucker.

Dr. Ritchie Visits U.S. Veterinary Institutions

Dr. John N. Ritchie, chief veterinary officer of Animal Health Division, England, spent August 6-11 in Washington with the Agricultural Research Service staff. During his stay in this country, Dr. Ritchie visited offices of the Animal Disease Eradication Division in several states; also the veterinary colleges of Michigan, Minnesota, and Iowa. Prior to going to the AVMA convention, he attended the short course on tuberculosis control held at Kansas State College, August 19-21.

ABBOTT



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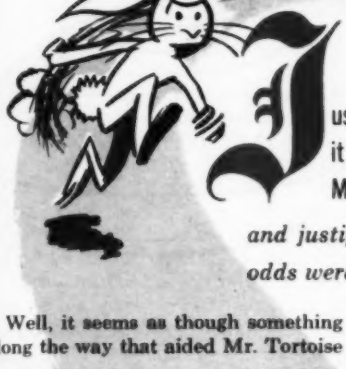

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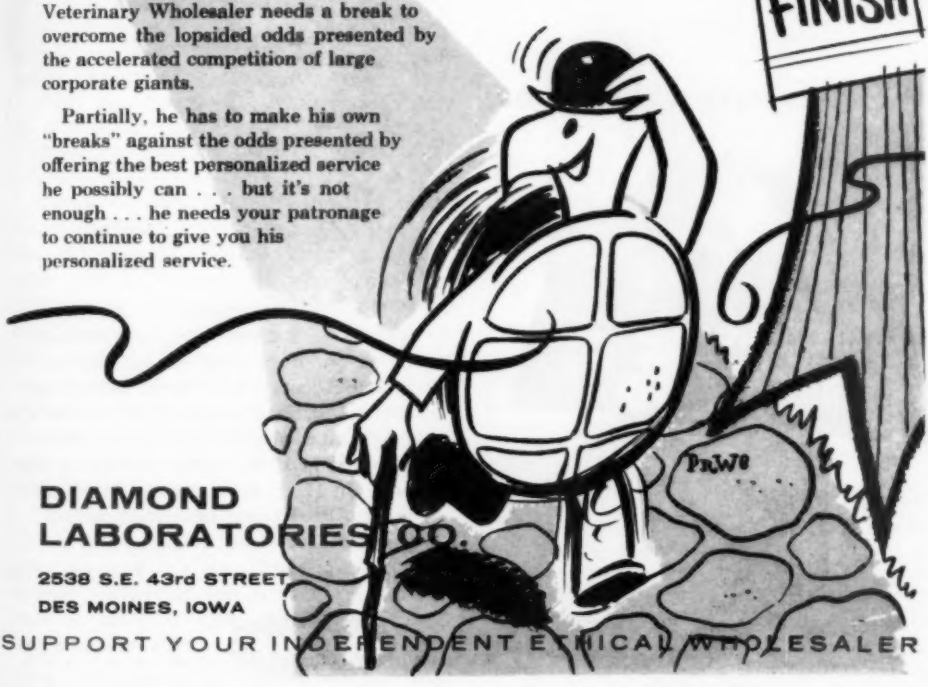

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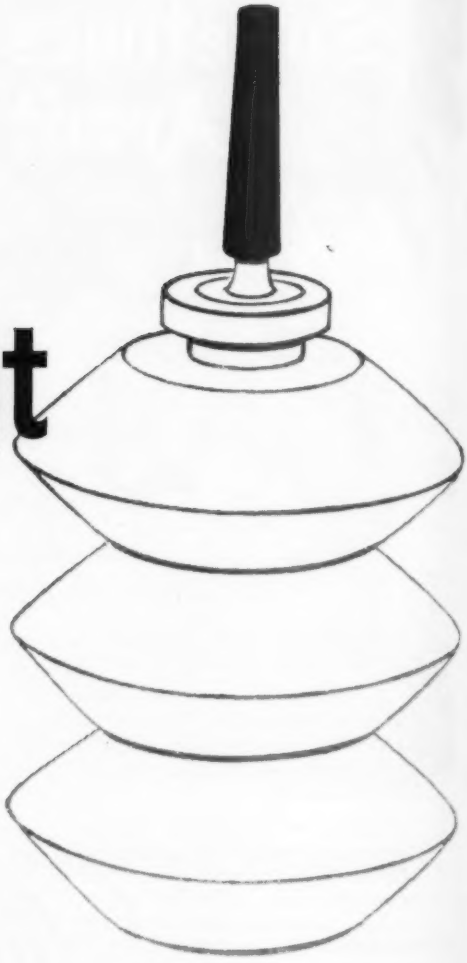

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JOURNAL
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Established January, 1877 Chicago 5, Illinois
Vol. 135 October 1, 1959 No. 7
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Address of the President-Elect at the Kansas City Meeting

S. F. SCHEIDY, V.M.D.

Philadelphia, Pennsylvania

MR. PRESIDENT, distinguished guests, fellow veterinarians, ladies, and gentlemen: It is, indeed, a pleasure for me to address you on this occasion. Many of you have traveled great distances in order to attend this meeting. In behalf of the officers of the AVMA, I should like at this time to express appreciation for the hospitality and the many courtesies that have been extended to us here in Kansas City by the many people who have worked hard during the past year in making arrangements for this convention. Much credit is due to the Women's Auxiliary for their fine cooperation and to the many councils and committee members, as well as to the delegates of our association, who have devoted long hours of work in taking care of the many specific—and often tedious—jobs that had to be done before this convention could be held.

We are privileged to have the Pan American Congress of Veterinary Medicine and the ninety-sixth Annual Meeting of the American Veterinary Medical Association this year in the heart of the great agricultural center of our country. The Kansas City area and its environs are known for the tremendous production of agricultural products, including livestock. Naturally, then, many of us are greatly interested in seeing Kansas City and getting to know more about it.

This is the first time that we in the United States have had an opportunity to serve as host for the Pan American Veterinary Congress, and it is a pleasure to have so many of our neighbors with us. During the past week, a seminar on veterinary education and public health was held by representatives from many countries of the western hemisphere. Enlightening presentations were given and valuable discussions among participating delegates were held. I'm sure much good work was accomplished, and I believe each individual and country represented will benefit from it.

President-Elect S. F. Scheidy

In recent months, several of your officers and many members of the Association have had an opportunity to travel in foreign lands, to attend veterinary meetings, and to familiarize themselves with some of the problems there. In certain of these overseas countries, bounteous crops, healthy livestock, and a thrifty agriculture simply do not exist. When we saw the

This address was delivered at the joint Ninety-Sixth Annual AVMA Meeting and Third Pan American Veterinary Congress in Kansas City, August 23-27, 1959.

backward conditions in some of these countries—especially relative to drinking water and dairy products, as well as certain food of animal origin—and spoke with the people who suffer from them, we realized how fortunate we are in this country.

THE CHANGING TIMES

One frequently hears comments about changing times and, indeed, change is the hallmark of the present period. Conditions never remain the same—they either improve or deteriorate. Many changes are taking place that affect our profession's activities. The one about which we have heard the most in the past few years has to do with agricultural practices; it is usually called "vertical integration in agriculture" or "contract farming." This method of operating farms, designed chiefly for more efficient animal production, consists of raising a great number of animals together. This appears to be important, inasmuch as there is a great increase in demand for food and undoubtedly this will continue with our rapidly increasing human population. In the short span of ten years, the United States population has increased approximately 28 million to the current figure of 176 million people. It is estimated that by 1975 the number will be over 210 million. In addition, it is anticipated that by that time the national economy will have increased, possibly doubled, in size so that the per capita income will be around 50 per cent higher than at present. I believe that the rapidly growing population, combined with a significant increase in purchasing power for many of our people, will bring about an expansion in the demand for food of animal origin.

This change in animal agriculture will affect the activities of many of our members. When there is a great concentration of livestock, more veterinary and disease

The Opening Session of the joint 96th Annual Meeting of the AVMA and

control work is required; where there is a reduction of livestock, veterinarians are obliged to find other and different types of work. This other work can usually be obtained. Frequently, in areas where farm livestock has been decreased, there is an increased residential development and with it an opportunity for small animal practice, food inspection, and public health work.

Since the primary design for integration in animal agriculture is for more efficient production, it will surely afford an opportunity for the veterinarian to become an important partner in the business. Experience would indicate that when a large number of animals are concentrated in one place, they must be handled carefully in order to control diseases, parasites, and other factors that adversely affect livestock production. This new type of animal agriculture apparently has been quite successful in the poultry industry; it seems to be growing in some of the swine-raising areas; and it has reached a notable size in a limited number of cattle-feeding and dairy operations. I believe one can say that the most successful "integrated" livestock operations owe their success to good veterinary supervision.

Another change in veterinary practice is the growth of partnerships and group practices. They will undoubtedly increase in the future and will aid greatly in providing services not always available in a one-man practice. Although the general practitioner will undoubtedly continue for a long time to be the backbone of veterinary medicine, he alone cannot supply all the services that will be required. As veterinary practice becomes more specialized, the assistance of colleagues or partners with special training will be needed to help provide the services demanded. For example, some of the specialties growing in popularity are radiology, specialized surgery, infertility work,

the Third Pan American Congress of Veterinary Medicine in Kansas City

General J. A. McCallam, convenes the Opening Session of the 96th Annual Meeting of the American Veterinary Medical Association, held jointly with the Third Pan American Veterinary Congress, in Kansas City.

laboratory services, animal nutrition, and toxicology.

DISEASE ERADICATION

Not a change, but a continuing necessity, are the programs organized chiefly by our federal and state or provincial governments for the eradication of animal diseases. They must go forward. Although they were started years ago, these programs are far from being completed. We must pursue them with diligence, with sincerity, and with oneness in purpose. We can be justly proud of the great reduction of tuberculosis in our cattle herds, but our pride should not cause us to neglect careful, routine testing so that we can eliminate the remaining infected animals. All too often we find animals at time of slaughter showing evidence of the disease. Frequently, these animals originate from herds that have not been tested for an extended period of time.

What has been said about tuberculosis is also true of brucellosis, another disease that is receiving a great deal of attention. We must cooperate to the fullest possible extent in programs designed to control and eventually eradicate this disease.

The federal government has recognized the importance of such problems and, indeed, has provided large sums of money to help do the job. We must continue to be vigilant in maintaining productive herds to produce wholesome food. Practicing veterinarians participating in these programs must be serious-minded and determined to do the job well. This will do much good for our profession from a public relations standpoint.

THE SMALL ANIMAL FIELD

In the rapidly growing metropolitan and suburban areas where we find large concentrations of people, there is an opportunity and obligation for us to provide veterinary service to the pet-owning public. In this day and age, the people expect (and rightfully so) good service which now can be provided because of many new developments in products and techniques. Many veterinarians have established fine hospitals and clinics for this service; however, there are other establishments whose facilities should be markedly improved if they are to deserve the designation "hospital."

Many practicing veterinarians, especially those interested in small animal work, frequently arrange for and attend seminars where they can discuss their mutual problems, improve their techniques, and learn of new developments that they can apply in their practices. These self-supported, self-directed seminars provide an opportunity for their members to select subject matter and instructors of their choice. Such arrangements should be encouraged for they allow their members to continue their education without having to spend a great deal of time away from their practices. I should like to mention, too, that many young veterinarians have made noteworthy contributions in recent years, especially in developing surgical techniques. Some of these young men have had special training; others have done their work in connection with their private and hospital practices.

A NEW OPPORTUNITY

A relatively new opportunity for service and for the employment of well-trained veterinarians is the care and maintenance of animal colonies needed for research. Many veterinarians are now members of research teams connected with medical schools, research institutes, government laboratories, and industrial organizations.

I'm sure many such organizations are or

will be seeking more young veterinarians for such work. This is as it should be. By providing expert animal care and certain techniques, trained veterinarians can contribute greatly to research that may lead to discoveries which will benefit animals as well as man.

EDUCATION

Last year, Dr. Rebrassier, our president for 1958-1959, reminded us of the importance of continually improving the teaching programs in our veterinary colleges and also referred to the need for paying attention to the identification and selection of potential candidates for our profession. I should like to reemphasize the importance of continued vigilance. Our educational system must be upgraded so that incoming members of the profession can meet the challenge that will be before them. We should begin offering encouragement to students of high school age if we wish to get the best type of applicant for veterinary education. We should advise and guide them so that they are adequately prepared when they make application for admission to our colleges.

It is also important that we support postgraduate and other continuing educational programs. In this regard we, as officers in the AVMA, frequently refer to the activities of our Research Council and our Education Council. As you know, funds have been collected over the years (chiefly from our own members and a few friends) to be used as stipends for qualified graduate students so that they can better prepare themselves for teaching and research work or both. This fund raising must not only continue, but must also become more active. It is encouraging to see a goodly number of recent graduates interested in continuing their education. They must be supported.

I believe we have made progress in this regard by arranging a more systematic method to acquire and handle funds for the Research Trust. Arrangements have been made to accept gifts either large or small. Those of appropriate size can be earmarked as a trust fund so that the principal will remain intact and only the earnings will be used. Such trust funds can be identified in any manner prescribed by the donor. In addition, we expect to employ an individual whose chief duty will be to work with the Research Trust and the Research Council. We believe he can help us arrive at the goal which is so clearly visible but so impossible to attain unless someone both qualified and interested administers the program.

The continuing education programs generally are given by the colleges and universities in the form of short courses (usually of several days' duration) and scientific programs which are presented at our constituent association meetings. We are pleased that the attendance at such meetings is increasing and that the programs are generally of high caliber.

PROFESSIONAL AND PUBLIC RELATIONS

On many occasions, we have spoken of the professional and public relations activities within the AVMA. Much progress has been made in these areas during the past few years, but much more can be made. Since additional personnel are now available, and we hope that still more will

The House of Delegates in Session at the 96th Annual Meeting of the AVMA

become available, we can begin to do at least some of the things we believe need doing—things we have talked about for a long time. I might add that officers of the AVMA cannot do them alone. Individual members must also participate. Much, and indeed the most effective, work can be done on the local level. This is especially true with respect to public relations work.

However, the central organization can and will give aid to the constituent associations as best it can. Literature, speakers' kits, audiovisual aids and, to a limited extent, personnel are available for work with constituent associations.

Perhaps the time has arrived when we should be giving consideration to another publication for our membership—so that we can keep them better informed regarding matters of professional interest. This publication would contain items related chiefly to the activities of the profession on the local, state, and national levels. It would provide a medium to convey news, legislative matters pertaining to the livestock industry, changes in animal agriculture, and other items not appropriate for publication in a professional, technical journal, such as the semimonthly or research journals of our Association. Such a publication is receiving serious attention at the present time.

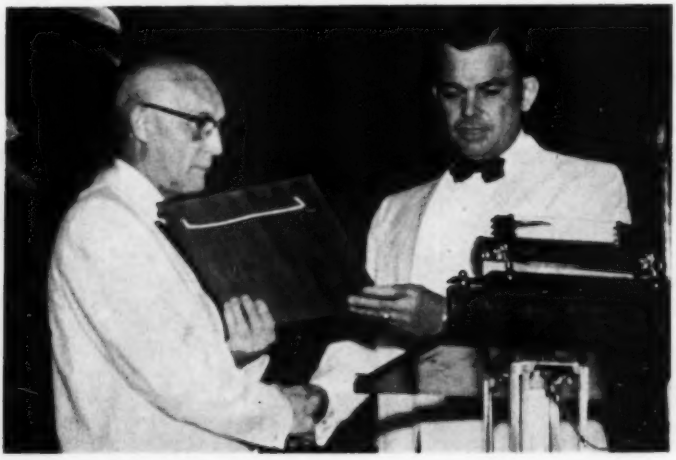
In order to tackle specific problems of need by constituent associations, plans are being made to hold a special meeting for the secretaries of these associations. A full exchange of ideas may help solve many of the problems. Several regional or district meetings throughout the country also will be held within the ensuing year in order to apprise each district of the problems related to the activities of the AVMA and to assist in solving them.

I am pleased to report that some local associations have in recent years arranged for two much needed services in their given area: emergency service and grievance committee service. Both of these services are commendable and I believe many other associations should also arrange to provide them. They give much needed help to our clientele, the animal-owning public, and also bring much credit to the profession. With a little planning and cooperative effort on the local level, we can do much to improve our relationship with the public.

WOMEN'S ACTIVITIES

The growth and activities of the Women's Auxiliary, especially in recent years, have been a great aid to our Association. Members of the Auxiliary have done noble work. Their loan fund has helped many young men complete their college education, and their work with student auxiliaries has done much to strengthen membership and participation in the affairs of both the constituent associations and the parent organization.

We greatly appreciate their interest and effort and are pleased to be able to show



Retiring President R. E. Rebrassier (left) receives the service plaque from Dr. D. Anderson, chairman of the Executive Board.

Some of the speakers who addressed the Opening Session of the 96th Annual Meeting of the AVMA and the Third Pan American Congress of Veterinary Medicine are shown at the right. ▶

Mayor H. Roe Bartle welcomes veterinarians, their families, and guests to Kansas City.

Mrs. E. A. Woelffer, presents greetings from Women's Auxiliary.

our appreciation by providing them with office space and certain other facilities, long overdue, in our Chicago office. It is hoped that these facilities can be expanded in the future. The Auxiliary's rapidly growing membership demands more service than can be readily rendered from the private home of a willing worker.

FUTURE PLANS

It has been recognized for several years, and it now appears increasingly evident, that there is a need for a general survey to help lay more specific long-range plans for our profession. The type of a survey currently under consideration cannot be done in a short time by sending out a fairly simple questionnaire. It will require several individuals—some with special training in gathering facts and information that later can be analyzed. This will be an expensive proposition, and we hope that foundation funds can be obtained for such a project.

Dr. J. N. Ritchie, president of the Royal College of Veterinary Surgeons, London, England, brings greetings from Britain.

From time to time, questions are raised regarding the location of the central AVMA headquarters office. Some members believe it should not be located in Chicago. Others believe that, wherever it is located, we should own our office building. Currently, these matters are under study, and I believe our committee will accumulate facts that will lead to the correct decision, not just for the immediate future but for many years to come.

Dr. Pablo Zierold, president of the Directing Council, Pan American Congress, addresses the group.

In these brief remarks, I have attempted to tell you some of our problems and some of our plans, trusting that during the ensuing year we may have your wholehearted cooperation. I assure you that we, as officers, will do our very best to solve our problems and to carry out our plans successfully.

Dr. Ervin A. Eichhorn, chief, Animal Health Branch, FAO, presents Sir Thomas Dalling's address, "Global Picture of Animal Disease."

I sincerely trust that you, one and all, will enjoy your stay in Kansas City. I feel certain that this joint meeting between the Pan American Congress and our annual convention will be extremely interesting and valuable.

Thank you.

Dr. James A. McCain, president, Kansas State University, reads his paper on the veterinarian and national welfare.

The Veterinarian and the National Welfare

JAMES A. McCAIN, Ed.D., LL.D.

Kansas City, Missouri

THE VETERINARY profession is indispensable to the health and vigor of the American people and to their economic progress. It is, therefore, in the national interest to undertake all reasonable means of fostering the continued development and perfection of veterinary science and practice.

Such self-evident truths hardly require expression, much less emphasis, before an audience of veterinarians. Yet so ignorant or apathetic is the general public with regard to the role of this profession that it is by no means inappropriate to remind you of the magnificant contributions of veterinarians and urge that you shout these contributions from the roof tops.

If a full measure of service is to be expected of veterinary medicine now and in the future, it must continually be refreshed and invigorated from those twin wells of education and research just as are such other professional occupations as engineering, human medicine, and the sciences. The requisite programs of education and research are a charge against tax funds, state and federal, and therefore will flourish or wither in direct proportion to public appreciation and support. Yet of all the professional occupations, perhaps none enjoys less public prestige today in proportion to its value to society than veterinary medicine, unless it be teaching.

If this statement sounds too harsh, it should be observed that veterinarians are not the objects of public hostility, as is sometimes the case with physicians, who occasionally display an obsessive concern with fees, and scientists, who busily devise techniques for our self-destruction.

The public image of the veterinarian is more condescending than unfriendly. As dentistry acquired the status of a profession the mammoth tooth inevitably displayed outside the practitioner's office, the symbol of a trade, disappeared. But the analogous symbol of the veterinarian, the horse, persists. People generally haven't accepted the fact that veterinary medicine is a profession, with intellectual and educational qualifications as demanding as those of the other learned occupations.

In a popular drama of the 1930's, eventually made into a film, the pretentions of a social climber were shattered by the revelation that her father was a veterinarian on whose premises was proudly displayed a life-size cardboard horse. Since this play was as devoid of artistic quality as of occupational authenticity, it has happily long since disappeared from the boards. But only last spring, an episode of the television show, "State Trooper," portrayed a veterinarian as the village oddball and ne'er-do-well.

It remained for Secretary of Defense Charles E. Wilson to furnish the crowning evidence of the distorted popular image of the veterinarian when in 1956 he proposed to eliminate veterinarians from the Armed Services because mechanization had replaced cavalry horses and pack animals. Mr. Wilson has been aptly described as a man who was born with a silver foot in his mouth.

The veterinarian who takes justifiable pride in his profession should be zealous in his determination to correct such erroneous public impressions. Far more important than pride, however, is the fact that a vigorous and progressive veterinary profession is vital to the nation, and whether the profession fulfills its mission adequately depends upon a chain of events starting with public understanding and appreciation.

PUBLIC MISCONCEPTIONS

What are the important facts about veterinary medicine which the public should know but does not? I should cite five such facts; you of the profession can doubtless supplement my list with others.

First of all I should impress upon the public that veterinary medicine is, in the fullest sense, a professional occupation with an ancient and honorable tradition.

Dr. McCain is president, Kansas State University, Manhattan.

Presented before the Opening Session, 96th Annual Meeting of the AVMA and Third Pan American Congress of Veterinary Medicine, Kansas City, Mo., Aug. 23-27, 1959.

According to Dr. J. F. Smithcor's interesting and scholarly volume, "Evolution of the Veterinary Art," the practice of veterinary medicine "is recorded in the oldest documents known." In the ancient civilizations of Babylon, Egypt, Greece, and Rome, veterinary medicine was equated with human medicine as a healing art and, like human medicine, the subject of numerous scientific and philosophical treatises. During these periods, veterinary practitioners enjoyed high social and professional prestige.

As Dr. Smithcors points out, "With the development of horseshoes in the third or fourth century, the blacksmith, to the detriment of the profession, assumed the healing responsibilities of the now defunct veterinarian." By the middle of the eighteenth century, however, the practice of veterinary medicine was on its way toward restoration as a profession, and the first veterinary schools were established. As a result, today's veterinarian must complete a six-year professional, university-level course of study roughly paralleling the training of a physician, and veterinary schools are integral parts of such distinguished universities as Edinburgh, Munich, and Madrid in Europe and 18 major institutions in the United States.

Second, I should cherish public knowledge and appreciation of the enormous contributions which veterinarians have made to the control and eradication of diseases which afflict human beings. Few people realize that there are 90 or more diseases of animals which can be transmitted to man and that veterinarians through practice, research, and regulatory activities have done yeoman service in combatting many of the more virulent of these.

Furthermore, veterinarians and veterinary research have a key role in the campaigns against three of today's greatest scourges of mankind: tuberculosis, cancer, and heart disease. Dr. J. Arthur Myers, professor of medicine and preventive medicine and public health at the University of Minnesota, devoted most of a 400-page volume, "Man's Greatest Victory over Tuberculosis," published in 1940, to the successful efforts of veterinarians to cope with this dread disease. Starting on the assumption that "the disease could never be controlled in the human family unless it is controlled among animals with which man comes in contact and upon which he depends for a part of his food supply," he declares, "the program of the veterinarian has been fully as effective, if not more so, than that of physicians, in controlling the disease in man."

The director of the National Heart Institute, Dr. James Watt, recently enumerated the continuing and valuable contributions of veterinarians and veterinary research to our knowledge of cardiovascular disease and declared: "I am confident that the advantages of a mutual concentration of interest with the medical profession on the problems of cardiovascular disease will become increasingly apparent to the veterinary profession, and that the bond between the professions will strengthen to the benefit of human welfare."

Notable achievements by veterinarians in the field of cancer research are listed by Willard H. Eyestone, D.V.M., chief of the Laboratory Aids Branch of the National Institutes of Health, who concludes a recent paper on this subject with the observation:

> Basic studies on the association of viruses in the etiology of cancer in domestic animals are particularly well suited to veterinary research. An important contribution to cancer research could be made if an organized system of working up clinical-pathologic data in veterinary institutions were adopted. Cancer in domestic animals should be studied more intensively for the ultimate benefit of animals as well as man.

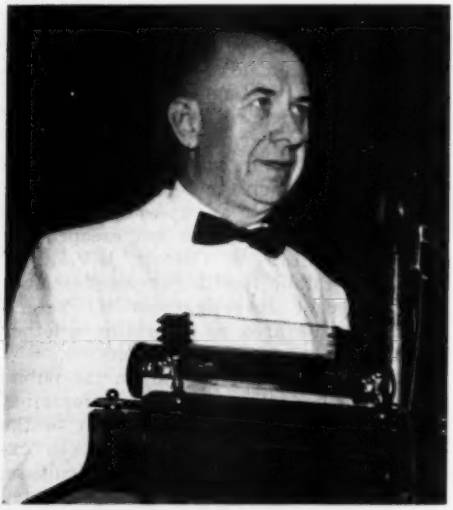
The veterinarian is acquiring increasing importance in the field of public health work. It is significant that the first National Institute on Veterinary Public Health Practice was held at the University of Michigan in October of 1958 and characterized as "a turning point in the development of this important field of community health." Even such an up-to-date menace as Los Angeles smog has not escaped the veterinarian. Earl J. Catcott, D.V.M., of that city's Public Health Service, describes several recent investigations by veterinarians in his area to determine whether animals are injured by air pollution.

Third, I should impress upon the public the enormous dollars and cents contributions of the veterinary profession to the nation's great livestock industry. In extolling the value of research to agriculture, land-grant college spokesmen are tempted to cite more examples from crop production than from livestock since the cause and

effect relationship between research and increased yields is simple to demonstrate. No less substantial are the benefits derived from veterinary research, but since these involve the prevention or cure of disease, they are more negative in character. The veterinary profession saves the livestock industry millions of dollars annually with a considerable part of these savings passed on to the consumer in lower costs of meat, poultry, and dairy products.

Many instances of the spectacular results of animal disease research can be cited. For example, veterinary research led to the development and application of a satisfactory vaccination procedure for hog cholera which has been conservatively estimated as saving $30 to $60 million annually, despite the fact that the yearly cost of the prophylactic procedure is approximately $35 million.

Cattle tick fever or Texas cattle fever at the turn of the century took a $40 million toll annually from the agricultural returns of the deep South. Eradication of this disease through veterinary research has permitted the South to engage in a diversified livestock farming.



Dr. S. F. Scheidy, new AVMA president, at installation ceremony in Kansas City.

The eradication compaign, conducted cooperatively by the agricultural research service of the U.S.D.A. and the various states, has succeeded in reducing annual livestock losses due to brucellosis by slightly more than 50 per cent in the past four years (from losses valued at $57 million in 1954 to $27 million in 1957) and has cut the infection rate among all cattle blood-tested from 2.6 per cent in 1954 to 1.6 per cent in 1958.

Prior to the development of blackleg vaccine by veterinarians in 1916, losses of calves up to 2 years of age from blackleg in the range country averaged in excess of 10 per cent annually. The use of the vaccine has reduced this loss to virtually zero. On Jan. 1, 1959, Kansas had approximately 1,600,000 head of cattle under 2 years of age worth an estimated $144 million. It can be assumed, therefore, that prophylactic use of blackleg vaccine is saving the Kansas livestock producers approximately $14 million a year.

Fourth, I should want the general public and especially the top administrative personnel of the Department of Defense to be aware of the essential role of veterinarians in today's Armed Services. Of course, the principal responsibility of the Veterinary Corps is not the treatment of military animals but the maintenance of acceptable sanitary standards for the food, community areas, and utilities and waste disposal systems utilized by Armed Forces personnel.

Persons who are familiar with the problems of maintaining large numbers of troops in countries having sanitary standards substantially below our own can fully appreciate the importance of veterinarians to personnel fitness and morale.

As an indication of the scope of services performed by the Veterinary Corps for our Armed Forces, it is worth noting that in 1955 the Veterinary Corps undertook procurement inspection involving the purchase of 1,469,026,000 lb. of food of animal origin, the approximate cost of which was $661,061,700. The total amount of all food products inspected by the Veterinary Corps during the year, including surveillance inspection, was 22,240,070,000 lb., of which 13,151,355,000 lb. was in oversea areas and 9,088,715,000 lb. in the continental United States. During that period, 69,000 inspections of source establishments

were made in connection with food procurement on a world-wide basis.

In the event of another global war, the Veterinary Corps of the Armed Forces of the future will have the vastly more complicated task of inspection and control involving food and water supplies contaminated by radiation, and perhaps even combating the effects of germ warfare.

It is ironic that at the very time when Secretary Wilson proposed the abolition of the Veterinary Corps, deans of the nation's veterinary schools were being invited to a conference at Oakridge to be instructed in their role in this new type of warfare.

Finally, I should want the public informed about the attractive career opportunities afforded young people of superior ability by veterinary medicine. Following a recent survey of employment opportunities, the American Veterinary Medical Association foresees no "saturation" of the field in the foreseeable future; on the contrary, a sharp increase is anticipated in the needs for veterinarians in public health work, animal disease control, food sanitation, and other such employment.

The veterinary schools rank first among the professional courses offered in American universities in the proportion of their graduates who are working in the field of their college major. A recent survey shows that ten years after graduation, 95 per cent of all veterinarians are still employed in veterinary occupations and most of the remaining 5 per cent are employed in related fields. By comparison, only 42 per cent of engineering graduates are employed in engineering occupations ten years after graduation, with 51 per cent employed in related fields.

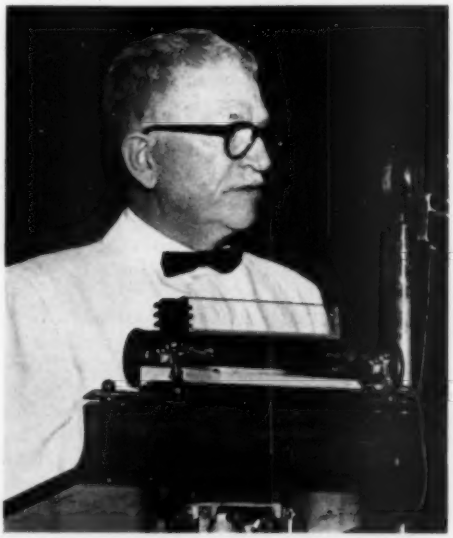
In earning capacity, veterinary medicine ranks high among the professional occupations. A follow-up study of veterinary graduates of Kansas State University, for example, reveals that 1947 graduates, on the average, earned $311 per month their first year out of college but were earning $821 per month ten years later; 1952 graduates started at $386 per month and five years later were earning $750 per month. By as much as $100 per month, these salaries were higher than those earned by graduates of any of the other schools or departments of the University.

PUBLIC RELATIONS

How can such facts as these be impressed upon the general public as a means of destroying the distorted popular image of the veterinarian and generating public appreciation and support for this important profession? To this end, I propose three measures.

First, the veterinary profession should conduct a systematic program of public information, not to enhance the social status of veterinarians but as a means of realizing professional goals and ideals. It is important that veterinary schools continue to attract youth of superior ability, and that adequate tax funds be secured for research and educational activities so essential to the development of any profession.

The excellent public relations program established a few years ago by the American Veterinary Medical Association, augmented by programs adopted by several state associations, is already accomplishing much. Such efforts should utilize all public information mediums. Pharmaceuti-



Dr. E. E. Leasure is installed as president-elect of the AVMA.

Mrs. Frank R. Booth, Elkhart, Ind., was elected president of the Women's Auxiliary to the AVMA at the Kansas City meeting. Mrs. E. E. Leasure is the new president-elect.

cal houses, for example, might be persuaded to devote more national advertising to publicizing the contributions of veterinarians to human health, to the livestock industry, and to the consuming public. But most important of all, every member of the profession should be sensitive to distorted portrayals of veterinarians in films, television programs, fiction, and the press, and they should be prompt and vigorous in protesting these to persons responsible for them.

My second admonition is that veterinarians become more agressive in seeking increased state and federal support for veterinary research programs. Despite the enormous benefits which have accrued to human health and to the nation's livestock industry through veterinary research, the funds now available for research are only a fraction of those needed. According to the U.S.D.A., the annual direct loss from death of animals in the United States is conservatively estimated to be 15 per cent of swine, 20 per cent of sheep and lambs, 10 per cent of cattle and calves, and 20 per cent of poultry. In the face of these losses, the funds available for research on livestock disease appear pathetically inadequate. According to a 1951 survey made by Dr. H. W. Marston of the U.S.D.A., the total farm value of cattle, swine, sheep, poultry, horses, and mules in the United States was estimated at $13,118,264,000, and in the same year, the total expenditures for all research on animal and poultry diseases was $10,987,000. Thus, only $1.00 of research money was available for every $1,200 worth of livestock. Expenditures for veterinary research have, of course, increased substantially since 1951 but so has the value of the nation's livestock. Assuming, however, that today the level of research support is double that of 1951, the available funds would still fall far short of needs.

State associations of veterinarians can be especially effective in efforts to increase legislative appropriations for veterinary research. Such efforts will inevitably run afoul of a growing national resistance to taxes. It is important, therefore, that a sharp distinction be made between nonproductive public expenditures and productive public expenditures which bring a return on the investment. In the case of veterinary research, the U.S.D.A. has estimated that animal agriculture failed to realize a potential gross income of over $3 billion in 1955 as a result of death losses alone. Increased funds for animal disease research would inevitably result in savings to the livestock industry of hundreds of dollars for every dollar spent.

Finally, I would urge your vigorous support for the nation's 18 veterinary schools. In the final analysis, it is these schools and the universities of which they are a part that are chiefly responsible for the professional status of veterinary medicine.

Gratifying progress has been made by the veterinary schools since World War II. In the field of physical plant expansion, for example, over half of the veterinary schools now have major buildings under construction or in the planning stage. However, all of the veterinary schools require substantial increases in operational funds. It is becoming more and more difficult to maintain first-rate teaching and research staffs in the face of the earnings which veterinarians can realize in private practice, in veterinary-related industries, and in government positions such as offered by the vast new U.S.D.A. veterinary laboratory under construction at Ames, Iowa. It should be kept in mind that effective advocacy of more funds for a veterinary school requires support of the entire

program of the university of which it is a part, a course of action I can commend to you with unbounded enthusiasm.

Certainly, flourishing schools of veterinary medicine are a most effective guarantee of a strong and progressive veterinary profession.

Awards Presented at Kansas City Convention

This year five citations were awarded at the AVMA Convention in Kansas City, Mo.

Dr. R. E. Rebrassier, AVMA president, made four of the presentations and Mr. John McCain presented the Borden Award at the opening session of the joint Third Pan American Veterinary Congress and Ninety-Sixth Annual AVMA Convention, August 24. A listing of the citations and their recipients follow:

Citation—1959 AVMA Award

Dr. John G. Hardenbergh

Dr. John G. Hardenbergh was born in Berkshire, N.Y., April 15, 1892. He received a V.M.D. degree from the University of Pennsylvania in 1916.

After graduation, he joined Gilliland Laboratories, Inc., at Marietta, Pa., for two years and then served with the U. S. Army Veterinary Corps from 1918-1920.

Serving for one year as a field agent for the New Jersey Bureau of Animal Industry, Dr. Hardenbergh joined the Mayo Foundation in Rochester, Minn., in the division of experimental surgery and pathology in 1921. He became associated with the Walker-Gordon Laboratory Company, Inc., Plainsboro, N.J., in 1927, and taught part-time at his Alma Mater. In January, 1941, he became Executive Secretary and Managing Editor of the AVMA publications.

Dr. Hardenbergh retired as executive secretary on Sept. 1, 1958, but has continued to serve the Association as general consultant and treasurer. He will officially retire from this latter position Dec. 31, 1959 (see the JOURNAL, Sept. 15, 1958, p. 301).

Dr. Hardenbergh was also a captain in the Veterinary Reserve Corps from 1924 to 1936; chairman of the advisory commission on veterinary medicine, procurement and assignment service, War Manpower Commission; a special consultant in veterinary medicine to the health resources advisory committee, Office of Defense Mobilization; and a member of the advisory council on rural civil defense.

He joined the AVMA in 1918. In addition to holding other memberships, Dr. Hardenbergh is or has been affiliated with the following societies: the U. S. Livestock Sanitary Association; the American Public Health Association; the Society of American Bacteriologists; Association of Milk Sanitarians (president in 1937); New Jersey Health Officers Association; New Jersey Health and Sanitary Association; Institute of Food Technology; Sigma Xi; and Phi Zeta. He was also secretary of the Veterinary Medical Association of New Jersey for several years. In addition, he is a member of the board of directors of the Anti-Cruelty Society of Chicago.

Last April, the General Alumni Society of the University of Pennsylvania presented Dr. Hardenbergh with its Award of Merit for his distinguished career and service to the University.

During the past year, he served as secretary to the U. S. Committee for the Sixteenth International Veterinary Congress held in Madrid, Spain, in May. He was also instrumental in organizing Pan American participation in the four-day scientific meeting of the AVMA in Kansas City, Aug. 24-27.

Dr. Hardenbergh's accession to the office of Executive Secretary to the AVMA is a milestone in the growth of the Association and the result of a long-time survey of the Association's affairs. The expansion of veterinary science in the affairs of our country necessitated an expansion of the profession's labors as well.

During the 18 years in which Dr. Hardenbergh served in this capacity, the veterinary profession has more than doubled in size, seven new schools of veterinary medicine have begun and have been accredited by the Association, and veterinary medicine has assumed increasingly important roles in public health, agriculture, medical research, and in the investigation of outer space.

President Rebrassier (right) congratulates Dr. John G. Hardenbergh after presenting him with the 1959 AVMA Award.

At the presentation of the AVMA Award, Dr. R. E. Rebrassier, president of the Association, largely attributed this orderly growth and the increasing importance of veterinary medicine to Dr. Hardenbergh's sound decisions and wise guidance.

Therefore, in recognition of his distinguished

service as executive secretary for 18 years as well as his countless contributions to the veterinary profession as a whole, Dr. John G. Hardenbergh was selected as recipient of the 1959 AVMA Award.

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Citation—1959 Practitioner Research Award

Dr. Edwin A. Churchill

Dr. Edwin A. Churchill was born in Phillipsburg, N.J., June 22, 1918. He attended public schools in Phillipsburg and graduated from Mercersburg Academy in 1936. He attended the University of Pennsylvania for one year of preveterinary training and received his D.V.M. degree from the School of Veterinary Medicine there in 1941.

Immediately after graduation, Dr. Churchill accepted a position as an assistant in the Department of Surgery at the University of Pennsylvania. He resigned this position in November, 1941, to enter private practice in Silver Spring, Md. He remained in Maryland until September, 1943, and then joined Dr. Sherman Ames of Easton, Pa., in general practice.

In September, 1944, Dr. Churchill became an assistant professor of surgery, School of Veterinary Medicine, at his Alma Mater. In 1947, he became associate professor of surgery and head of the department. In September, 1950, he resigned to enter equine practice at Centreville, Md.

Dr. Churchill is currently owner and operator of a large animal hospital with a 40-horse capacity in addition to a small breeding establishment. He devotes all his time to equine practice specializing in Standardbred horses (trotter and pacers).

As a result of Dr. Churchill's investigations and the publication of his method for the surgical removal of sesamoid bone fragments from injured horses, he has enabled other veterinarians to return a higher percentage of horses to successful racing in a shorter time than had been possible previously.

In addition, he took the time to conduct his investigation and to publish his results while engaged in a busy private practice. Therefore, in recognition of his contribution to veterinary medical research for horses, Dr. Churchill was selected as recipient of the 1959 Practitioner Research Award.

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Citation—12th I.V.C. Prize

Dr. William H. Feldman

Dr. William H. Feldman was born in Glasgow, Scotland, Nov. 30, 1892. He came to the United States in 1894, and obtained his preliminary education in the public schools of Paonia, Colo. He then attended Colorado State University, receiving a D.V.M. degree in 1917; an M.S. degree in 1926; and an honorary D.Sc. degree in 1945.

Following graduation, Dr. Feldman joined the faculty of his Alma Mater. He remained a member of the teaching and research staff there until 1927, when he was invited to join the staff of the Mayo Clinic as an instructor of comparative pathology in the Mayo Foundation Graduate School at the University of Minnesota.

He was advanced to assistant professor in 1932; associate professor in 1936; and professor in 1944. Upon his retirement from the Mayo Clinic on Jan. 1, 1958, he moved to Washington, D.C., at the invitation of the Veterans Administration, to become

President Rebrassier (right) presents the Practitioner Research Award to Dr. Edwin A. Churchill.

chief of laboratory research in pulmonary diseases in the Department of Medicine and Surgery.

His professional activities have been in the area of experimental pathology. He has been particularly interested in neoplasia of domesticated animals, the pathology of certain infectious diseases of animals transmissible to man, and the pathology and chemotherapy of human tuberculosis and leprosy. He has carried out extensive laboratory studies on the chemotherapy of tuberculosis, and in 1944, he and his colleagues, Dr. Frank C. Mann and Dr. H. Corwin Hinshaw, received the American Medical Association's Gold Medal Award for their scientific exhibit of original work in this field.

In 1946, Dr. Feldman delivered the Harben Lectures at the Royal Institute of Public Health and Hygiene in London, England. He also lectured on the chemotherapy of tuberculosis in seven other cities in Europe. That same year, he was presented with the Pasteur Medal by the Pasteur Institute of Paris and awarded the Alvarenga Prize of the College of Physicians, Philadelphia, for his pioneering work in the chemotherapy of tuberculosis.

In 1948, he was a delegate to the Fifth International Congress on Leprosy at Havana, Cuba. In 1953, he was given the Dearholt Medal of the Mississippi Valley Conference on Tuberculosis; and in 1955, he received the Trudeau Medal of the National Tuberculosis Association for his "early careful studies of the action of drugs on tuberculosis, which contributed immeasurably to the successful use of chemotherapy in this disease."

The Minnesota V.M.S. presented Dr. Feldman with a citation for "distinguished service to medicine," in May, 1957, "for his contributions to the fundamental research which lead to several great modern advances in chemotherapy and, especially, for his work in the development of basic medical knowledge of the antibiotics such as streptomycin and related compounds for use in the treatment of human tuberculosis." He also received the Distinguished Service Medal of the American College of Chest Physicians at the annual meeting of the College in New York City, in June, 1957.

Dr. Feldman became president of the International Association of Medical Museums (now called the International Academy of Pathologists) in 1941; president of the American College of Veterinary Pathologists in 1949; and president of the American Association of Pathologists and Bacteriologists in 1952.

He is presently a member of the Scientific Advisory Board of the Armed Forces Institute of Pathology, Washington, D.C.; the Advisory Medical Board of the Leonard Wood Memorial (American Leprosy Foundation, chairman); and the Committee on Institutional Grants, American Cancer Society.

Dr. Feldman is also a member of the Advisory Council of the Colorado Foundation for Research in Tuberculosis, the Minnesota Pathological Society, the American Trudeau Society, the American Society for Experimental Pathology, the Minnesota V.M.S., the AVMA, and the Società Italiana delle Scienze Veterinariae. In addition, he is a member of the alumni association of the Mayo Foundation, Sigma Xi, Alpha Psi, and Sigma Nu, among others.

Dr. Feldman has contributed widely to medical literature. He has written: "Neoplasms of Domesticated Animals" (1932); "Avian Tuberculosis Infections" (1938); and over 300 other scientific papers. Thus, for his outstanding service to veterinary science and to the veterinary profession, Dr. Feldman was chosen the recipient of the 12th I.V.C. Prize for 1959.

Dr. William H. Feldman (right) receives from President Rebrassier the Twelfth International Veterinary Congress Prize.

Citation—1959 Borden Award

Dr. Peter Olafson

Dr. Peter Olafson was born in Gardar, N. Dak., Jan. 25, 1897.

Initially, Dr. Olafson attended University High School in Grand Forks, N. Dak. He began his higher education at the North Dakota Agricultural College in 1921, and received his D.V.M. degree from New York State Veterinary College in 1926. One year later, he also received a M.S. degree from Cornell University. During the summers of 1928, 1929, and 1930, Dr. Olafson studied at the

Mr. John McCain (left) presenting the 1959 Borden Award to Dr. Peter Olafson.

University of Chicago and, in 1936, he took a sabbatical leave to attend the universities in Leipzig and Munich.

He has been associated with the Department of Veterinary Pathology at the New York State Veterinary College since 1925. He was an instructor from 1925 to 1927, then assistant professor from 1927 to 1936, and finally, professor in 1936. He has been head of the Department of Pathology & Bacteriology there since 1946.

Dr. Olafson was the first veterinarian to describe bovine listeriosis, to establish that hyperkeratosis was the result of a poison and not a virus, and to isolate the virus of mucosal disease of cattle. In addition to his original research, he has trained and inspired other pathologists who, in turn, have made many contributions to the knowledge of bovine diseases.

Enjoying an international as well as a country-wide reputation as a scientist, Dr. Olafson received a request by the Israeli government, in 1955, to investigate its dairy husbandry industry which was being greatly hampered by disease. The value of his contributions prompted the government to ask Cornell University to extend his sabbatical leave from a year to 18 months.

He is the author of several papers. A selection of their topics include: virus diarrhea, hyperkeratosis, muscular stiffness of lambs, tumors of domestic animals, congenital cardiac anomalies in animals, "wobbler" colts, and sterility in bulls.

Therefore, Dr. Peter Olafson was chosen as the 1959 Borden Award recipient "for his outstanding contributions to dairy cattle disease control."

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Citation—1959 Gaines Award

Dr. Wade O. Brinker

Dr. Wade Oberlin Brinker was born in Fulton, Ohio, Oct. 11, 1912. After graduation from Kansas State College (now a University) in 1939, he joined the faculty at Michigan State as a graduate assistant. From 1941 to 1946, he served with the Army Veterinary Corps, then returned to M.S.U. after World War II.

Dr. Wade O. Brinker, recipient of the 1959 Gaines Award.

In 1947, Dr. Brinker obtained his M.S. degree from Michigan State; in August, 1948, he was named associate professor of surgery & medicine; and in July, 1950, professor. He became head of the Department of Surgery & Medicine in July, 1957.

Dr. Brinker was president of the Michigan V.M.A. in 1954. The same year, he was also chosen "Veterinarian of the Year" by the Gaines Dog Research Foundation. In 1955, he was elected to the AVMA Executive Board—District IV—to fill the unexpired term (ending in 1959) of the incumbent, Dr. Fred J. Kingma, who had moved.

Dr. Brinker has conducted research on penicillin blood levels in dogs and in bone and joint surgery in small animals. As a teacher, he has also stimulated interest among students in surgical repair for injured animals and assisted in helping them develop techniques for corrective surgical procedures.

In addition, he devotes much of his time to presenting demonstrations and describing surgical procedures at national and state meetings of veterinary organizations. Thus, in recognition of his contributions to the advancement of medicine and surgery for small animals, Dr. Brinker was selected as this year's recipient of the Gaines Award.

An Evaluation of Diagnostic Methods for Bovine Brucellosis in Field Herds

GORDON C. JANNEY, D.V.M., M.S., and DAVID T. BERMAN, D.V.M., Ph.D.

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THE PROGRAM[6] which culminated on June 6, 1956, in the declaration of the state of Wisconsin as a modified-certified brucellosis-free area employed the milk-ring test[5] as the principal method of locating herds for subsequent sero-agglutination tests. On the first semiannual ring test in 1951, 41.4 per cent of the herds had suspicious reactions. This percentage gradually decreased to 2.6 per cent on the fifteenth test, completed in December, 1958.

The percentage of "falsely suspicious" herds increased as the number of herds with suspicious reactions to the ring test decreased. A "falsely suspicious" herd is one with a suspicious reaction on the ring test, but in which no animals have positive sero-agglutination reactions (*i. e.*, complete agglutination at the 1:100 dilution for non-vaccinated and at 1:200 for vaccinated animals). For example, on the tenth ring test, of 11,385 herds which had suspicious reactions on the ring test, only 3,226 herds (28.3%) contained animals with positive reactions to the sero-agglutination test. On the tenth ring test, it was necessary to use the sero-agglutination test on more than 8,000 herds, at an average cost of $10 per herd, yet no reactors were disclosed.

The following was carried out in an effort to determine whether it would be possible to reduce the amount of unnecessary herd sero-agglutination testing by altering the interpretation of the results of the milk ring test to reduce the number of "falsely suspicious" herds. At the same time, information on the applicability of other diagnostic procedures was obtained.

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These studies were supported in part by the Animal Disease Eradication and Animal Disease and Parasite Research Divisions, ARS, U.S.D.A., and were carried out while Dr. Janney was stationed by the Animal Disease Eradication Division at the University of Wisconsin. Dr. Janney's present address is Laboratory Services, Animal Disease Eradication Division, U.S.D.A., Washington, D.C. Dr. Berman is professor of veterinary science.

MATERIALS AND METHODS

Blood serums from all cows with positive reactions to the sero-agglutination test within a ten-county area were obtained daily from the Animal Disease Diagnostic Laboratory after routine testing, along with the veterinarian's report on the herd. Only herds which had suspicious reactions on the twelfth or thirteenth ring tests were used in the study. Herds were scheduled for sampling with greatest effort being made to visit those herds with 2+ and 3+ reactions on the milk-ring test, as these constituted the largest proportion of "falsely suspicious" herds.

At the farm, individual quarter milk samples and a composite sample were collected separately, in sterile 20-ml. screw-cap vials, from each reactor animal. During the second half of the survey, samples from suspects whose titers were one half dilution below the reactor level and were also in herds containing reactors were collected. Animals used in the survey were rebled at the time the milk samples were collected. Both the original blood sample from the laboratory and the sample obtained on the investigational visit to the farm were subjected to sero-agglutination tests. The test tube method, the rapid plate test, and tests with acidified plate antigens (APA)[3] were used. In APA tests the following pH values were used: 4.0, 3.8, 3.5, and 2.9. Final readings were made at the end of 15 minutes and any agglutination observed was considered a positive reaction.

Isolation of Brucella was attempted by direct culture and by inoculation of guinea pigs. Two-tenths milliliter of gravity cream was pipetted from each quarter sample onto a "W" agar[1] plate and the inoculum was spread over the surface by means of a sterile bent glass rod. The inoculated plates were incubated at 37 C. in an atmosphere containing 10 per cent CO_2 for seven days.

Two guinea pigs, 500 to 1,000 Gm. in weight, were inoculated intraperitoneally with 2.0 ml. of gravity cream from the composite milk sample from each reactor or suspect. Thirty days postinoculation, the guinea pigs were killed, and the blood serums tested for the presence of Brucella agglutinins by means of the rapid plate agglutination test. Ten tissues (spleen, liver, kidney, testis, and prefemoral, axillary, cervical, iliac, hepatic, and bronchial lymph nodes) from each guinea pig were cultured on Brucella agar (Albimi*). The plates were incubated at 37 C. with 10 per cent CO_2 for seven days. Colonies with characteristic morphologic features were identified by their agglutin-

*Albimi Laboratories, Brooklyn, N.Y.

TABLE 1—Isolation of Brucella from Animals with Positive Sero-Agglutination Reactions

Ring test status of herds	No. of herds	Herds positive on culture (No.)	Herds positive on culture (%)	No. of reactor animals	Reactor animals positive on culture (No.)	Reactor animals positive on culture (%)
2+	31	18	58.1	51	25	49.0
3+	37	24	64.9	61	35	57.4
4+	41	27	65.8	65	39	60.0
Totals	109	69	63.3	177	99	55.9

ability with immune serum prepared for use against *Brucella abortus* and inagglutinability in normal serum.

The presence of agglutinins in the milk was determined by two methods. The milk plate test[2] was conducted with skim milk from each of the quarter samples as well as the composite sample using the standard rapid plate antigen and the ring test antigen. Results were recorded after eight and 15 minutes of incubation at room temperature. Two drops of rennet extract was added to each 5 ml. of milk of the four quarter samples and the composite sample. The whey was separated and agglutination tests done using the ring test antigen[2,3] and the standard plate antigen. Results were recorded after eight and 15 minutes of incubation at room temperature.

TABLE 2—Isolation of Brucella from Animals with Suspicious Sero-Agglutination Reactions

Ring test status of herd	No. of herds	No. of suspects	Suspects positive on culture
2+	1	1	0
3+	4	4	1
4+	9	16	1
Totals	14	21	2

RESULTS

The bacteriologic data (tables 1, 2) include the results obtained from direct culture and from inoculation of guinea pigs. From 10 to 12 per cent more recoveries were made by using both animal inoculation and direct culture than with either method alone. Brucella organisms were recovered from 49 per cent of the cows with positive sero-agglutination reactions, representing 58.1 per cent of the herds with 2+ reactions on the ring tests (table 1).

Brucella were also isolated from 57.4 per cent of the cows with positive sero-agglutination reactions, representing 64.9 per cent of the herds with 3+ reactions on the ring test, and from 60.0 per cent of the cows with positive sero-agglutination reactions, representing 65.8 per cent of the herds with 4+ reactions on the ring test. Of the 177 reactors in 109 herds, Brucella were isolated from 99 (55.9%) of the reactors and from 69 (63.3%) of the herds.

Of the 21 cows with suspicious sero-agglutination reactions (table 2), there were only 2 infected animals with suspicious reactions on the sero-agglutination test.

Agglutination tests were conducted with APA on serums from 176 reactors and 21 suspects (tables 3, 4). There was no relationship between the strength of reaction on the ring test of the herd and the results

TABLE 3—Results of Tests with Acidified Plate Antigens of Serums from Animals with Positive Sero-Agglutination Reactions

	Ring test status of herds			
	2+	3+	4+	Totals
Neg. aggl. at pH 4.25 and neg. culture	0	1	0	1
Neg. aggl. at pH 4.25 and pos. culture	0	0	0	0
Neg. aggl. at pH 4.0 and neg. culture	1	0	2	3
Neg. aggl. at pH 4.0 and pos. culture	0	0	0	0
Neg. aggl. at pH 3.8 and neg. culture	1	1	1	3
Neg. aggl. at pH 3.8 and pos. culture	0	0	0	0
Neg. aggl. at pH 3.5 and neg. culture	4	2	2	8
Neg. aggl. at pH 3.5 and pos. culture	2	3	1	6
Neg. aggl. at pH 2.9 and neg. culture	0	1	1	2
Neg. aggl. at pH 2.9 and pos. culture	3	1	0	4
Pos. aggl. at pH 3.5 and neg. culture	23	22	26	71
Pos. aggl. at pH 3.5 and pos. culture	20	33	33	86
Pos. aggl. at pH 2.9 and neg. culture	3	6	20	29
Pos. aggl. at pH 2.9 and pos. culture	11	10	23	44

TABLE 4—Results of Tests with Acidified Plate Antigens of Serums from Animals with Suspicious Sero-Agglutination Reactions

	Ring test status of herds			
	2+	3+	4+	Totals
Neg. aggl. at pH 4.25 and neg. culture	0	0	0	0
Neg. aggl. at pH 4.25 and pos. culture	0	0	0	0
Neg. aggl. at pH 4.0 and neg. culture	1	3	5	9
Neg. aggl. at pH 4.0 and pos. culture	0	0	0	0
Neg. aggl. at pH 3.8 and neg. culture	0	0	2	2
Neg. aggl. at pH 3.8 and pos. culture	0	0	0	0
Neg. aggl. at pH 3.5 and neg. culture	0	0	3	3
Neg. aggl. at pH 3.5 and pos. culture	0	0	0	0
Neg. aggl. at pH 2.9 and neg. culture	0	0	2	2
Neg. aggl. at pH 2.9 and pos. culture	0	0	1	1
Pos. aggl. at pH 3.5 and neg. culture	0	0	2	2
Pos. aggl. at pH 3.5 and pos. culture	0	1	1	2
Pos. aggl. at pH 2.9 and neg. culture	0	0	0	0
Pos. aggl. at pH 2.9 and pos. culture	0	1	0	1

obtained with the APA test; however, there was a direct relationship between the degree of reaction on the ring test and the other tests applied. Inhibition of the agglutination reactions was not observed at pH 3.8 or higher with serums from animals which yielded Brucella. The agglutination reaction with the serums of 6 animals from which Brucella were recovered was inhibited at pH 3.5. Isolations were made from an additional 4 animals whose serum failed to agglutinate the antigen at pH 2.9.

In Cameron's modification of the whey test,[2,3] conducted on samples from 177 cows (table 5), 9 of the 43 animals classified as negative, 9 of the 16 classified as suspicious, and 81 of the 118 classified as positive yielded Brucella. All of these animals were identified as reactors on the standard sero-agglutination test. Similar results were obtained on the plate tests using skim milk with the ring test antigen (table 6). The results of plate tests with whey or milk obtained with the standard plate antigen did not agree as well with the bacteriologic findings as those obtained with the ring test antigen.

Three of 21 animals with suspicious reactions on the sero-agglutination test were classified as positive on the whey and milk-plate tests, while the remaining 18 were classified as negative on both tests. Of the 2 animals with suspicious sero-agglutination reactions which shed Brucella, 1 was classified positive and the other negative on the whey and milk-plate tests.

DISCUSSION

In the ten Wisconsin counties investigated, 42,896 herds were subjected to the twelfth and thirteenth semiannual ring tests. There were 445 herds with 2+ reactions; 666 herds with 3+ reactions; and 741 herds with 4+ reactions. By extrapolating from the percentages of isolations of Brucella in the herds with the various ring test reactions found in this investigation to the total number of herds in these groups, it may be estimated that there were approximately 257 shedders in the herds with

TABLE 5—Relation Between Whey Agglutination Reactions and Isolation of Brucella from the Milk of Reactor Animals

	Whey test results			
	Negative		Suspect	Positive
2+ ring test herds	(Neg.,	+)	(++)	(+++,++++,+++++)
No. animals sampled	11	2	7	31
Brucella isolated	2	0	4	19
3+ ring test herds				
No. animals sampled	20	1	8	32
Brucella isolated	5	0	4	25
4+ ring test herds				
No. animals sampled	7	2	1	55
Brucella isolated	1	1	1	36
Total isolations per No. cultured	9 of 43		9 of 16	81 of 118

TABLE 6—Relation Between Milk Plate Agglutination Reactions and Isolation of Brucella from the Milk of Reactors

	Milk plate results			
	Negative		Suspect	Positive
2+ ring test herds	(Neg.,	+)	(++)	(+++,++++,+++++)
No. animals sampled*	11	7	4	28
Brucella isolated	3	2	2	18
3+ ring test herds				
No. animals sampled	18	3	6	34
Brucella isolated	5	1	3	26
4+ ring test herds				
No. animals sampled	7	3	3	52
Brucella isolated	1	2	3	33
Total isolations per No. cultured	14 of 49		8 of 13	77 of 114

*One herd whey tested only.

2+ reactions, 432 shedders with 3+ reactions, and 488 shedders with 4+ reactions. It is obvious that the elimination of herds with 2+ ring test reactions from the required sero-agglutination test would leave a dangerous number of shedders in an area.

The results of the APA test show that when serums from reactors are tested with the acidified antigen, a pH of 3.8 or higher did not inhibit agglutination reactions of the serums of cows which proved to be shedders. Acidified antigens at pH 3.5 or lower did inhibit the sero-agglutination reactions of shedders.

The use of the APA test on serums from suspects showed that pH 3.5 could be used without inhibiting reactions of serums from shedders. Among the 177 animals classified as reactors on the standard sero-agglutination test, there were only 7 whose serums did not agglutinate antigens at pH 3.8 or higher, and which might, therefore, be considered to be nonspecific reactors. It is questionable whether the additional work required to conduct the APA test is warranted in a program such as that conducted in Wisconsin in order to save such a small number of presumably nonspecific reactors. In fact, Rose and Roepke in the original description of the APA test[9] suggested that it gives best results on typical suspect herds and single reactor herds. In Wisconsin, suspicious reactions to the sero-agglutination test do not influence the control program appreciably.

The recent work[2,3] on the whey test has stimulated a revival of interest in this procedure. It has been shown in this investigation and a similar one conducted by the workers in Minnesota,[9] that the test, with the published interpretation, is unsatisfactory for use at least under the conditions which prevail in these two states. Too many reactors which are shedding Brucella would be undetected by the test. In an area with a high prevalence of brucellosis, the retention of these reactors would not create as serious a problem as it would in a certified area.

Cameron has stated[4] that the interpretation of the test has been modified to include all animals which show any agglutination reactions and that the incubation time has been increased from ten to 15 minutes. The use of these modifications probably results in the detection of reactors heretofore missed, but it also incriminates a large number of noninfected animals, thus increasing the cost of the program.

SUMMARY

Milk from cows reacting to the sero-agglutination test from herds with 2+, 3+, and 4+ reactions on the milk-ring test in a ten-county area was examined bacteriologically. Although a smaller proportion of the reactors in the herds with 2+ milk-ring test reactions yielded Brucella than reactors from herds with the stronger ring test reactions, a sufficient number of shedders was found in these herds to require continuation of the present interpretation of ring test results. Tests with acidified plate antigens showed that inhibition of agglutination reactions did not occur at pH 3.8 or higher with serums from reactors or suspects which yielded Brucella on culture. At pH 3.5 or lower, such inhibition was observed.

Agglutination tests with whey, using the ring test antigen, missed a significant num-

ber of reactors which were properly identified by the sero-agglutination test and which were positive on bacteriological examination.

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Listeria monocytogenes Infections

After aiding in the parturition of an aborting cow, a veterinarian in the Netherlands developed papular exanthema on both arms. *Listeria monocytogenes,* type I, was isolated from some of the papules; also from the stomach of the calf.—*R. G. Dijkstra in Tijdschr. Diergeneesk. (July 1, 1959): 719.*

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Listeria monocytogenes has been isolated from a number of captive animals in the Netherlands including 1 marmoset, 2 chinchillas, 1 paca, 2 lorikeets, 2 doves, and 3 canaries.—*P. Zwart and J. Donker-Voet in Tijdschr. Diergeneesk. (July 1, 1959): 715.*

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Listeria monocytogenes was isolated on 141 occasions from animals of 12 species in Sweden. All of the 20 strains serotyped belonged to type I. Of the 111 chickens from which isolations were made, 47 showed no lesions typical of listeriosis.—*A. Nilsson and K. A. Karlsson in Nord. Vet.-med., 11, (May, 1959): 305.*

The Introduction and Spread of Atrophic Rhinitis of Swine in Korea

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During a discussion on atrophic rhinitis of swine (as observed in Canada) at the Korea Veterinary Medical Association meeting, Seoul, October, 1958, a veterinarian stated his belief that the disease was present in a government swine-breeding station in the Republic of Korea (South Korea). The following month several breeding stations were visited, e.g., Ka-Ya breeding station, designated C; Sa-Chon, designated B; and the National Experimental Breeding Station at Sang Whan, designated A.

No cases were detected at station C when visited in October, but from the clinical signs described, there is no doubt that many cases had been present during the previous year. The herdsman reported frequent severe sneezing which was often accompanied by nasal hemorrhage and, in some animals, unthriftiness. Distortion of the facial bones had not been observed. All the pigs at station C had come from station B.

Inspection of the swine at station B revealed at least 8 cases of rhinitis among 50 animals; in 2, there was defection of the nasal bones; in another, the snout was short, and prognathism present. Sneezing, with hemorrhage, was present in 2 other pigs with rhinitis. All of the swine at this station were adults, weighing between 150 to 200 lb.

An infected animal was selected for slaughter. Necropsy showed complete absence of the turbinate bones, with partial lysis of the ethmoid cells.

THE ORIGIN OF THE INFECTION

All of the swine at stations C and B had come either directly from station A, or were the descendants of those which had come from that station. Careful investigation at station A revealed that all the pigs at the station were descendants of swine

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imported from the United States in 1952. Atrophic rhinitis was undoubtedly present in members of the first litters farrowed by the imported stock. None of the original imported animals remained, but 1 hog, 18 months old, had suffered from the disease as a weanling and showed marked facial deformity. Both sire and dam of this particular animal were members of the first litters of the imported stock. Apart from this animal, no definite cases were observed.

A most important point, relative to the origin of the infection, is the fact that no swine had ever been housed at the Sang Whan station either prior to or since the arrival of the imported pigs.

Recently, one of the authors (Dr. Chung) visited 30 farms which had received pigs from the government breeding stations, and reported an incidence of 25 per cent rhinitis. Twenty farms in the same area which had *not* received imported stock were free from the disease.

An organism identical with *Pasteurella multocida* has been isolated from 2 early cases in young pigs. Our limited experience would indicate that this organism is not common in Korean swine. As usual, cultures made from pigs with advanced cases did not show presence of *Past. multocida*.

The imported stock has been traced back to the farms or origin in the United States but naturally no significant information could be obtained.

DISCUSSION

The imported swine had certificates of health and remained in quarantine for several weeks on arrival. Such measures give no protection against this disease due to the high incidence of nonlesion carriers. This creates a serious problem when animals are moved from infected to noninfected areas. The occurrence and high incidence of the disease among the litters of the imported swine may be related to the radical changes of environment and feed. It is of interest that the disease has almost disappeared from the imported herd and offspring which is maintained at station A. Similar herd immunity was noticed in Canada. The assembling at station A of breeding stock from several different farms in the United States was probably the most important single factor in causing the disease in Korea.

CONCLUSIONS

1) Atrophic rhinitis has been diagnosed in swine in Korea.

2) The infection originated in swine imported from the United States.

3) At present there is no evidence that the disease existed in Korea prior to these importations.

4) Imported stock should be selected either from herds in which the disease has never occurred or from herds which have been free from the disease for four or five years.

5) To prevent the entry of disease, the use of frozen semen or pigs isolated from birth by cesarean section must be considered.

Porcine Brucellosis in Denmark

Four enzootics of brucellosis in swine were recorded from 1929 to 1955 in Denmark. A fifth started in January, 1959, in the district in which brucellosis of hares had been found.

Two sows which had aborted in December, 1958, were serologically positive for brucellosis a month later. Of the other 34 adults in the herd, 7 sows and 1 boar were reactors. When slaughtered, 2 of 5 sows showed uterine miliary brucellosis; in addition, 1 had lesions in an ovary and an enlarged spleen, while the other had lesions in the kidneys. The only lesion in the boar was a slightly enlarged spleen.

Although the organs of the other animals were apparently normal, Brucella were cultured from the spleens of 3, as well as from the lesions mentioned. The organism was identified as *Brucella suis* var Thomsen.—*H. Bendtsen in Nord. Vet.-med., 11, (June, 1959): 391.*

Strangulation of a Dog's Tongue

The tongue of a dog somehow slipped through a section of the aorta of an ox, which became fixed around the base of the organ. About ten hours later, because of the engorgement and necrosis, the accident was discovered and the foreign body removed. The tongue was then massaged in an attempt to stimulate circulation. The dog died from autointoxication 12 hours later. —*E. Eisenmenger in Wien. tierärztl. Monatschr., 46, (1959): 543.*

Radiation Hazards to the Practicing Veterinarian

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THE DANGERS of ionizing radiations, including x rays, together with the problem of protection from these radiations, is becoming a serious problem of which there are many facets. The purpose of this paper is to present some of the more practical aspects from the viewpoint of the practicing doctor of veterinary medicine.

Three aspects of the problem will be discussed.

1) What are the dangers to the veterinarian from exposure to x rays and how can he protect himself? It is important in this aspect of the problem to consider the age of the veterinarian in relation to whether he is under or over the reproductive age.

2) There is a possibility of danger to the animal. The influence on heredity of routine radiography in young animals must be respected. Radiographs taken every week or two weeks of a young dog suspected of having hip dysplasia should be discouraged. If the disease is not evident or does not develop, and repeated x-ray exposures are made, his progeny may develop mutations. In my opinion, a single radiographic study of the dog suspected of having the disease is justified.

In animals, as well as in man, radiographs of the spine, pelvis, and abdomen result in particularly high exposures of radiation to the gonad regions. This is more true of females since the ovaries must be in the field of radiation; in the male, the testicles are out of the field of radiation and can be protected. The ovaries, however, are deep in the body and, therefore, the dose to them is not as great as it could be to the male if the testicles are openly exposed. Libido is not affected by x-irradiation or any other type of irradiation. The greatest danger lies in the possibility of affecting genetic mutations.

3) There is danger from general radiation due to exposure associated with fallout and various isotopes. This is an interesting and important problem but is presently outside the scope of this paper.

Effective public relations can be utilized in certain veterinary medical procedures and should be considered. If the owner is asked to hold the animal while a radiograph is taken, or if others are watching procedures involving x rays, it should be made clear to them that they are adequately protected from any possible radiation danger.

GENERAL RULES

This paper emphasizes the danger of exposure to the practicing veterinarian, and how he can best protect himself while he works with x rays. The protection necessary is extremely simple. General rules for protection while taking radiographs, without involvement of fluoroscopy, are: (1) Wear lead aprons and gloves during all procedures;[1] (2) use a cone or cylinder for all procedures; (3) use cassettes with double-intensifying screens; (4) use fast film whenever possible; (5) keep as far away as possible from the whole procedure.

The rules for protection while doing fluoroscopy are similar but have a few additional points. These are:

1) Wear lead aprons and gloves at all times while fluoroscoping.

2) Use low milliamperage and high kilovoltage.

3) Keep the size of the diaphragm small.

4) Have the output of the machine measured and tested for leaks.

5) Dark-adapt eyes before starting to fluoroscope.

6) Keep the x-ray machine or point of origin of the x rays and the patient at least 18 inches apart.

7) Use aluminum filtration (2 mm. is preferred in most instances).

8) Use the shortest exposure time pos-

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This paper was presented before the New York State Veterinary Medical Association in September, 1958.

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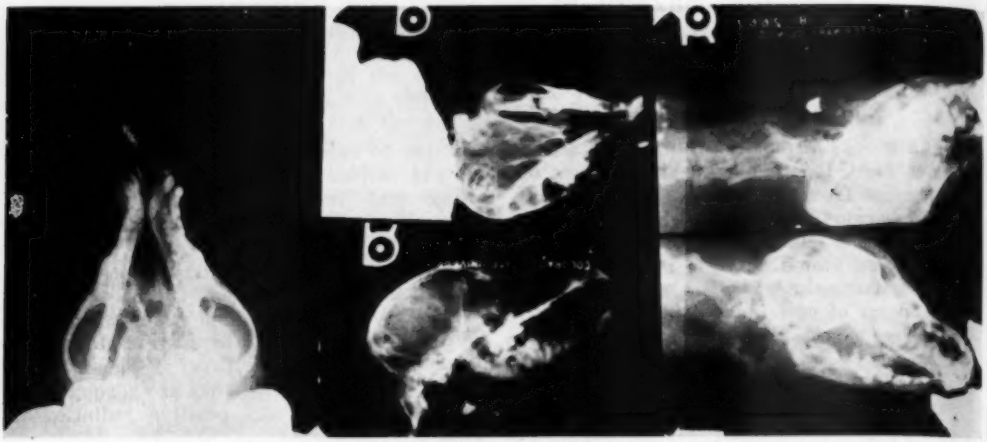

Fig. 1—Examples of error in technique in radiography and fluoroscopy: in the illustration on the left, the white areas near the neck of the dog are the gloved hands of an assistant; on the right, the gloved hand is seen holding the nose of the dog. The hand should never be placed in the direct beam of the x rays, even with gloves on.

sible. An interval fluoroscopic time clock is strongly advised; do your thinking with the machine off.

9) Take radiographs to evaluate the doubtful findings; do not keep on fluoroscoping when you cannot make up your mind.

Another important rule is never to place a hand in the direct beam of the x rays even with gloves on. This applies to both fluoroscopy and radiography. In our experience, we seem most tempted to hold the head of the animal inasmuch as this is extremely difficult to immobilize (fig. 1).

The problem is relatively simple, and if these rules are followed, one will be safe.

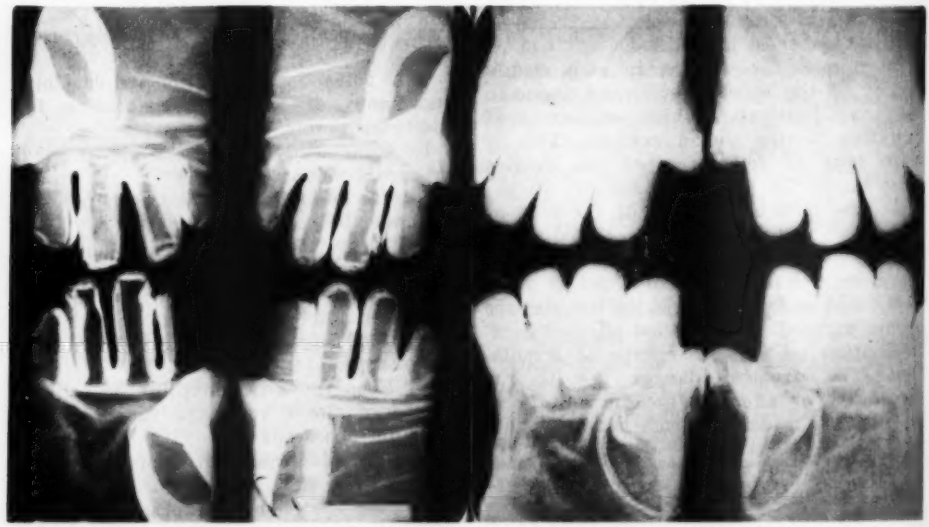

Fig. 2—Exposure of four sets of gloves. Some of the gloves show dark areas in the fingers and in the palms, indicating that x rays are passing through the gloves. This does not mean that they are inadequate, but it would seem advisable to have the gloves tested by an ionization chamber in the fingers.

The fluoroscope and the x-ray machine are not dangerous if used correctly. Copies of these or similar rules could be posted in x-ray departments or on x-ray machines.

protection than those which do not come over the shoulders. Longer and heavier aprons can be purchased if you are tall or desire better coverage. A double thickness

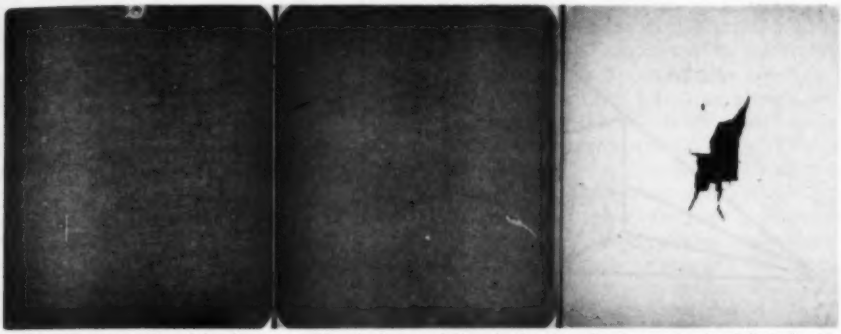

Fig. 3—Radiographs of lead aprons. The darkness of the shadow on the apron to the left indicates that this apron transmits a considerable amount of radiation. In the center illustration, it is less prominent and the illustration on the right shows a definite break in the lead apron. An apron most commonly breaks where it folds into the midportion of the lap as the operator is seated.

Remember, you are protecting yourself against a real danger even though you cannot see it, smell it, feel it, taste it, or hear it. Our whole being is geared to protect ourselves against the things that we can detect with our senses, but we must protect ourselves from an equally real and deadly danger of radiation by following the rules at all times.

Proper Care of Equipment

There are some problems: Gloves may be inadequate or have holes in them. It is advisable to have them checked from time to time. The best way to check lead gloves is to put an ionization chamber into each finger and then expose them to x rays. If this is not feasible, it may be helpful to take a radiograph of the gloves (fig. 2). Approximately 80 kv.p. should be used for these exposures.

Secondly, lead aprons may also have holes in them. These can be demonstrated by taking a radiograph of the apron (fig. 3). Some older lead aprons are so constructed that all the lead moves to the bottom of the apron after a period of usage.

Proper care should be taken of aprons and gloves:

1) Do not allow the apron to be bent or crumpled. Hang it over a bar or round wood pole (fig. 4). A coat apron gives more of lead in the lower portion of the lead apron is often helpful and may protect it against breaking.

2) Gloves should be hung up so that they may air out. A tin can may be inserted into the glove with both ends of the can cut out. This supports the glove in an open position and permits ventilation.

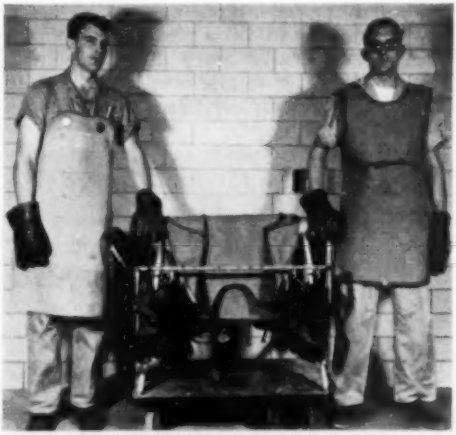

Fig. 4—Photograph showing a satisfactory means of caring for the aprons and gloves. The gloves are hung by small clamps and the aprons are laid over a rounded metal bar. On the left is shown an ordinary-type apron and on the right a coat-type. The coat-type should be a little longer for a man of this height.

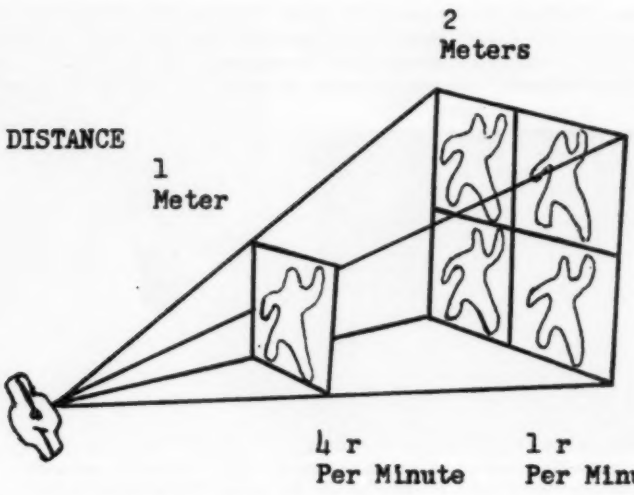

Fig. 5—Illustration showing why the intensity of light and x ray decreases as the distance increases.

OTHER SAFETY MEASURES

The use of cones or cylinders increases the safety of x-ray equipment. This cuts down the amount of x rays scattered throughout the room and the amount of exposure to the animal. If two or more sizes of film are used, two or more cones or cylinders of different diameters should be available and used. The cones should be just big enough to cover the film. An adjustable cone is excellent. Almost every radiograph should show at least a partial outline of the cone. Some authorities insist that there should be a "cone cut" on at least three sides of every film. Cones also help the operator to aim accurately. A lead diaphragm is as efficient as a cone, but has the disadvantage of being difficult to aim directly at the part to be radiographed.

Fig. 6—Example of a head fluoroscope; these should not be used.

The cassettes with double intensifying screens require 1/20 to 1/40 as much exposure of the film as does a cardboard holder without intensifying screens, so the use of screens is important. There are screens of varying speed available. Fast film is also available now and will reduce the amount of exposure by half.

Keep as far away from the whole procedure as possible. Distance is the most important single factor in protection. Have a fairly long exposure cord—at least 5 or 6 ft.—and try to stand at the end away from the x-ray tube. Do not hold animals unless it is absolutely necessary.

The intensity of the amount of radiation at any point follows the same rule as visible light. This is the law of the inverse square. If at 1 meter there are 4 roentgens per minute, at 2 meters there will not be one half as much, but one fourth as much, or 1 r/min. (fig. 5).

One of the best ways to evaluate the safety of the procedure is by means of film badges. Film badges have been used in our department for several years. They have been worn on our arms, collars, and under aprons. We average about 8 cases a day per day worked, and all the readings on our badges have indicated that our operation is safe, but we understand and follow the rules to the letter. Occasionally, we purposely expose the film badge to too much radiation just to be sure that our film

badge reading company is alert. They will notify us by telegram when this occurs. Film badges should be used if practical, particularly if the operation is rather extensive. An incomplete survey of veterinarians in Denver and elsewhere in Colorado indicates that the busy clinics have 1 or 2 radiological cases per day. These men need not worry about the x-ray exposure dangers if they always follow the rules.

The problem in fluoroscopy is somewhat more difficult because the amount of radiation used is much greater, and the operator must be close to the x rays.

When we talk about the amount of radiation used, we are talking primarily in terms of milliampere seconds. Fluoroscopy at 3 ma. for one minute requires 180 ma. sec. quantity of x-irradiation. The average radiograph of an extremity of a small animal or horse would use 5 or 10 ma. sec. of total quantity of x-irradiation. The amount of x ray used in fluoroscopy is 20 to hundreds of times greater than is used in taking a single radiograph. The milliamperage used in fluoroscopy should never be more than 3, and often 2 is enough. The kilovoltage should be as high as the machine will tolerate, or up to 90 kv.p. in new machines. The higher the kv.p., the more penetrating and efficient the x-ray beam; thus, less x rays will be needed.

Lead gloves and aprons should be worn, and the hands should never be put in the direct x-ray beam, even with gloves on. Failure to observe these precautions has been primarily responsible for severe injuries to the hands of some veterinarians.

The size of the x-ray beam must be kept small in fluoroscopy. A beam 6 inches square or 6 inches in diameter is preferred. The beam must be smaller than the fluoroscopic screen, and must be fixed so that it can be no larger. Head fluoroscopes (fig. 6) should not be used at all. They should be put under lock and key, relegated to museums, or destroyed.

The output of an x-ray machine should be checked. It should not exceed 10 roentgens per minute (r/min.)[1] at the table top; 6 r/min. can and should be obtained if possible. Old fashioned x-ray units should be discarded or inspected by a radiologist or radiation physicist to be sure that they are safe.

The operator should dark-adapt his eyes before starting to fluoroscope. He will be better able to see in the dark and can use less x ray in examinations if red glasses are worn before fluoroscopy is started.

If the distance between the point of origin of the x rays and the patient is kept to 18 inches, the patient's exposure will be minimal. Aluminum filtration also cuts down the total amount of x rays to which the subject is exposed. An average of 2 mm. of aluminum filtration should be used in all machines for both fluoroscopy and for taking radiographs. This will not interfere with the good quality of radiographs.

Use the shortest exposure time possible when fluoroscoping. Do your thinking when the machine is off. Stop completely and take a radiograph if you are not sure. This also has the advantage of establishing a permanent record of the case.

There are a few problems in radiology in man that may be of interest to the veterinarian. It is now generally accepted that pregnant women should not be subjected to routine radiographic pelvimetry. Physicians making radiological examinations must endeavor to understand the nature of the radiation exposure to their patients and how to minimize it. They must be cognizant of the dangers of radiation, and weigh this against the urgency and seriousness of the medical problems they are trying to solve.

Routine and indiscriminate use of radiological procedures in people of reproductive age should be avoided. If a lead apron is laid over a child and a cone is used, radiographs of the extremities prevent little danger. Fortunately, in children the most common areas requiring radiographs are the extremities. These examinations can be accomplished without any significant exposure to the child. The need for x-ray examination is much more common in older people than in young people, but even in the people above reproductive age, indiscriminate and unnecessary routine radiographic examinations should be discouraged.

Radiographs of the spine and abdomen need more exposure; this is a rather serious problem when radiographs of these parts are needed in children and young adults. Fortunately, these are rarely needed. If it is clinically indicated because of injury or other clinical aspects of the problem, certainly radiographs of any part of a child or young adult should be taken.

CONCLUSION

There are means of keeping radiation exposure to a minimum. All doctors should be aware of these means, and should be constantly alert to the need for protecting his patients.

Straw Sunshade Best for Hogs

In a test at the University of California, a straw sunshade proved best for keeping hogs cool during hot weather. These pigs gained 1.35 to 1.75 lb. a day compared with 1.20 to 1.63 for those protected by the next best shade materials such as aluminum or plywood. The straw shades were constructed by stretching chicken wire across the tops of 4-ft. poles, covering the wire with 1 ft. of straw, then placing more chicken wire on top to keep the straw from blowing. The straw settles to about 6 inches in depth.—*Successful Farming (July, 1959): 10.*

[This confirms the long held opinions of those who have observed the advantages of straw sheds for repelling the sun's heat. Furthermore, low straw ceilings, which allow slow, steady ventilation, can be used to advantage to retain body heat in cold, drafty buildings.—W.A.A.]

Deep Litter for Broilers

In an experiment, in Austria, weight gains and feeding efficiency of broilers raised on wire floors, with the droppings cleaned from underneath every third day, were compared with those of broilers kept on bedding of 4 inches of chopped wheat straw changed weekly, and with those kept on deep litter (6 inches of equal parts of peat moss and chopped wheat straw, loosened when it began to cake).

The advantage was with broilers on the wire floor in the first four tests (9 weeks each) but with birds on deep litter the last four similar tests, as the litter became older. The deep litter method was also the most economical management for broiler production.—*World's Poult. Sci. J. (April, 1959): 132.*

Advantages of Deep Litter for Hogs

Pigs raised on "deep litter" and a standard ration, at the Ohio Agricultural Experiment Station, gained 8 per cent faster, with less feed, than did pigs raised on concrete. When antibiotics were added to their feed, the benefits were much less for the pigs kept on deep litter than for those on concrete. The litter consisted of 12 inches of old litter built up to about 20 inches with new litter. When the litter became too deep, the top was skimmed off and fresh cobs were added. It has long been known that antibiotics are formed in decomposing litter, which may account for the lack of response to antibiotics.

A second advantage is the labor saving since there is little manure cleaning, except from the "soiled" corner of the pens. This is an important item when the animals are kept confined.—*Farm J. (Aug., 1959): 41.*

Venoms Inoccuous When Taken Orally

The reason why snake venoms are inoccuous when taken orally are unknown. They apparently are not absorbed as such from the gastrointestinal tract. However, neither gastric juice nor 0.2 per cent hydrochloric acid have detoxicating effect on the venom. Whether intestinal juices, enzymes, or bacteria have any detoxicating effects is not yet definitely known. Pancreatic juice and bile have no adverse effect on cape cobra venom. After venom was fed to birds, it could be demonstrated in their feces for 24 hours. Nevertheless, the venom must be altered in the intestines so that it is not toxic.—*M. M. Siddiq Husain in Pakistan J. Med. Res., 2, (Jan., 1959): 5.*

A New Blood Parasite of British Cats

A blood parasite, provisionally designated *Eperythrozoon felis*, was detected in blood smears taken from 6 cats examined at a Cambridge, England, small animal clinic. Morphologically, the organism resembled *Haemobartonella felis*, which is responsible for feline infectious anemia in the United States.

Eperythrozoon felis occurred on the surface of the erythrocytes, up to 50 per cent of which were parasitised in experimental infections. Although anemia occurred in experimentally infected cats, no other disease directly attributable to the infection was observed.—*John Seamer et al. in Vet. Rec., 71, (May 16, 1959): 405.*

Surgery and Obstetrics
and Problems of Breeding

Evaluation of Reliability of a Diagnosis Test for Pregnancy in Mares Based on the Presence of Gonadotrophic Hormones

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New Brunswick, New Jersey

THE ECONOMIC IMPORTANCE and the number of sport and pleasure horses have greatly increased in recent years in the United States. In several states, raising pleasure and racing horses constitutes a major industry. An early and accurate diagnosis of pregnancy in the mare is important in the control of sterility, especially in registered racing horses, since the breeding programs do not permit the practice of artificial insemination.

The lack of a systematic study of the accuracy of laboratory pregnancy diagnosis tests forces the horse owner and the veterinarian to depend upon rectal examination, fremitus of the middle uterine artery, and vaginal examination. The accuracy of this diagnosis is determined by several subjective factors and many individual variations. Reliable laboratory diagnosis tests are of value as an aid to clinical examination.

The objectives of this paper are to present the procedures and to evaluate the results obtained by a laboratory test for diagnosis of pregnancy in the mare, based on a determination of gonadotrophic hormones present in the serum. A brief discussion of the biology of the gonadotrophic hormones and the fundamentals of this method is included.

MATERIALS AND METHODS

The material used consisted of 215 blood samples, from mares, sent to our laboratory for diagnosis of pregnancy by New Jersey veterinarians. Upon arrival at the laboratory, the serum samples were refrigerated until the mice were ready for injection. Samples which showed signs of contamination were treated with dihydrostreptomycin. This proved useful when samples could not be tested immediately.

The tests were carried out as follows: 3 female Swiss mice, weighing 8 to 10 Gm. and about 22 days old, were used for each test. Each mouse was given a single subcutaneous injection of 0.5 ml. of blood serum. The mice were killed 48 hours later and examined for evidence of ovarian stimulation and uterine congestion and distention.

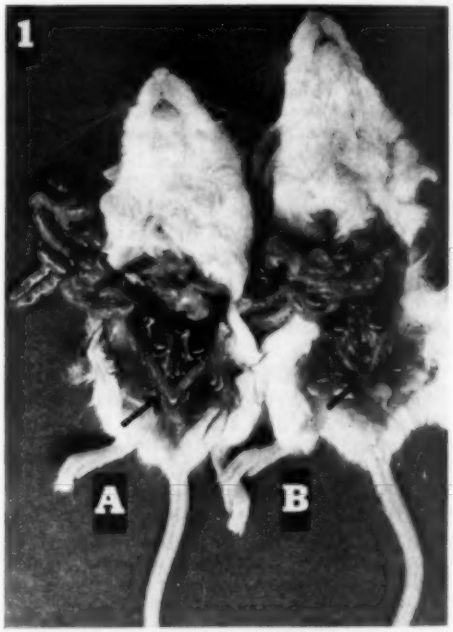

Fig. 1—Two 24-day-old mice with exposed ovaries and uteri (arrows) for reading of pregnancy diagnosis test based on gonadotrophic activity of mares' serum: (A) the uterus in a positive test; (B) the uterus and ovaries after injection of a nonpregnant mare's serum.

From the New Jersey Agricultural Experiment Station, Rutgers-The State University, New Brunswick, N.J.

Contribution as a paper of the journal series; work carried out under project 679, Pregnancy Test in Mare, New Jersey Agricultural Experiment Station.

The authors thank Dr. R. L. Squibb, Chairman of the Department of Poultry Science, Rutgers University, for his assistance; also the following New Jersey veterinarians: Drs. J. D. Case, E. R. Cushing, M. Ehrlich, A. R. Gilman, W. C. Gray, C. Lohmeyer, T. J. Lynch, L. S. Nilsson, Jr., H. C. Petree, R. C. Rost, A. Singer, H. M. S. Smith, J. Tanzola, R. L. Ticehurst, D. C. Tudor, H. E. Winters, and G. L. Yeaton.

RESULTS

The exposed reproductive organs of the immature female mouse may show various degrees of gonadotrophic stimulation 48 hours after the injection of the blood sample containing gonadotrophins. Figures IA and 3 show the typical positive reaction of this test. The sample which produced this reaction was quantitatively analyzed and contained about 10 international units (I.U.) of pregnant mare serum (PMS) per milliliter of blood serum; this means that each test animal was given about 5. I.U. of PMS with the single injection of 0.5 ml. of serum.

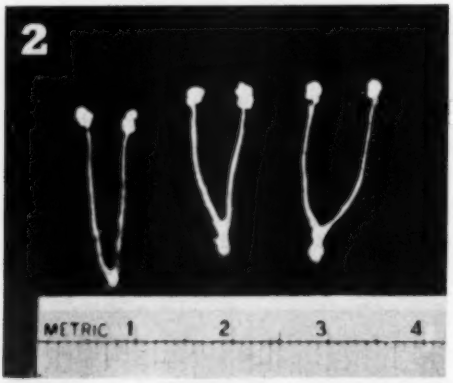

Fig. 2—Ovaries and uteri of the 3 mice injected with blood serum of a nonpregnant mare. Observe magnification on the metric scale.

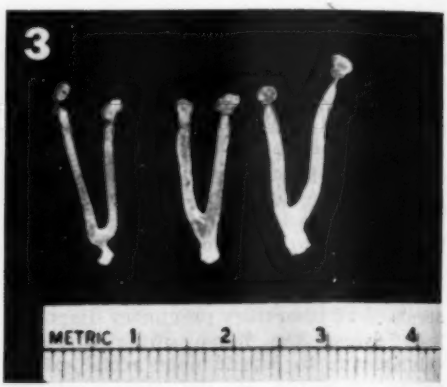

Fig. 3—Ovaries and uteri of the 3 mice used in a positive pregnancy test. The magnification is the same as in figure 2.

In contrast with this dramatic positive reaction, mice given serum from a nonpregnant mare had at necropsy an anemic uterus which was whitish, threadlike, and hardly distinguishable with the naked eye from the surrounding structures (fig. 1B). The difference in size and shape of uteri of immature mice injected with serum of pregnant and nonpregnant mares is shown (fig. 2, 3).

Forty-eight hours after injection, the samples containing gonadotrophic hormones induced morphological changes in the ovary and uterus of the mouse which were characteristic signs of gonadotrophic stimulation. With blood samples from mares betwen the fiftieth and eightieth days of pregnancy, a positive test can often be determined by observing the mucosa of the vagina which may be open or near opening, wet, and translucent. In the untreated 24-day-old mouse, the vaginal membrane is dry, dirty, and desquamating.

A positive test was reported when 1 or more of the 3 injected animals showed the ovarian or uterine signs of gonadotrophic stimulation.

The results obtained in the laboratory were followed through in 215 cases by the clinical observations of the New Jersey veterinarians cooperating in this project (table 1). A positive test for pregnancy was obtained in 146 cases. In every case but 1 the diagnosis was correct. The sample which gave the false positive came from a mare reported later by the veterinarian to have pathological reproductive organs. The samples in the positive group of cases were collected between the thirty-ninth and the 152nd day of pregnancy.

In the 65 cases in which the test was negative, no errors were found. These blood samples were collected 40 to 143 days after breeding. However, in the 4 cases in which the blood samples were obtained 30 to 32 days after breeding, the laboratory test yielded false negatives, which was to be expected because of the lack of gonadotrophins at this early period of pregnancy.

DISCUSSION

The laboratory test for diagnosis of pregnancy in the mare reported in this paper is based on original work,[2] which investigated the presence of gonadotrophic hormones in the blood of pregnant mares. These substances, also called equine gonad-

otrophins, or PMS, contain high concentrations of follicle-stimulating hormone (FSH) and proportionally small amounts of luteinizing hormone (LH). The FSH stimulates growth and maturation of the gonads; the LH promotes growth of the corpus luteum without stimulating its hormonal secretion. The gonadotrophins can be detected about the thirty-eighth day of pregnancy and reach their maximum titer between days 50 and 80; the concentration of these hormones gradually diminishes until they may be absent toward the end of the sixth month of pregnancy. The presence of gonadotrophic hormones in the blood of the mare is perhaps the most reliable test for pregnancy.

The morphological changes observed in the ovaries and uteri of the mice are mainly the effect of follicle stimulation. The intensity of this stimulation of both ovary and uterus depends on the gonadotrophic activity of the serum.

In the immature mouse the ovary is normally somewhat hyperemic, but 48 hours after the injection of a sample containing gonadotrophic hormones, the mouse ovary shows an appreciable increase in size and disseminated hemorrhagic spots (blood points) on the periphery. It is not always possible to detect with the naked eye the existence of ripening graafian follicles; however, with the aid of a binocular loupe, variable amounts of graafian follicles and hemorrhagic spots can be easily observed. The enlargement and congestion of the mouse oviduct is also a sign of the effect of gonadotrophic activity in the blood sample.

Perhaps the most striking effect observed in the reproductive tract of the test animal injected with a sample containing gonadotrophic hormones occurred in the uterus. Uterine congestion and distention may vary in degree but most of the mice given a positive blood sample showed a remarkable enlargement and congestion of the uterus, distended with variable amounts of uterine fluids, the whole uterus being surrounded by a dense network of blood vessels which gave it the aspect of a reddish, hyperemic tubular structure.

When the blood sample of the mare was taken 39 to 152 days after breeding, the immature female mouse test was extremely accurate. Only 1 case was found to be false positive. This occurred in an animal which was clinically reported to have a "pathological condition of the reproductive organs." Although no differential diagnosis was obtained, very likely this mare was affected with some kind of trophoblastic disease, chorio-epithelioma, choriocarcinoma, or any gonadotrophin-producing tumor. It is well known that blood serum or urine of nonpregnant mares and women affected with these neoplasms may give a positive test for pregnancy, owing to the fact that these tumors produce gonadotrophins.[11,14,17,18] The veterinary practitioner should inform the owner of the rare incidence of false-positive pregnancy tests.

TABLE I—Results of Diagnosis of Pregnancy in the Mare, Using Single Injections of Mares' Serum in Immature Female Mice

No. of cases	Days after service when samples were taken	Results	Observations
145	39-152	Positive	No errors
1	?	False positive	Pathological reproductive organs. Chorioepithelioma? Teratoma?
65	40-143	Negative	No errors
4	30-32	False negative	Errors because no gonadotrophins are present at this stage of pregnancy
Total 215			

About 32 per cent of the samples tested were from mares bred 39 to 50 days before the blood samples were taken. Another 20 per cent were from mares bred 100 to 152 days prior to the collection of the samples for testing. Therefore, the results obtained are in agreement, as far as concentration of gonadotrophins is concerned, with those of various other investigators. Gonadotrophins had been found in pregnant mare serum 37 to 180 days after breeding;[2,3] between days 50 and 150, with the highest concentration occurring about day 70;[4] between days 40 and 120;[13] and, in pregnant ponies, between days 32 and 110, with the peak concentration occurring between days 54 and 75.[1,5,7-9] There is only one report of detecting gonadotrophins before the thirty-seventh day of pregnancy.[8] Thus, the four false-negative tests found in this experiment (obtained on days 30 to 32) were due to the lack of gonadotrophic hormones at this early stage of pregnancy.

The discovery of gonadotrophic hormones in the blood of pregnant mares,[2,3] and later studied by other authors,[16] soon found a practical application as an early test for

pregnancy. Many authors reported satisfactory results in using various methods based on the presence of gonadotrophins in PMS. Most of these methods are basically the same,[10] requiring several injections of blood samples into the experimental animal and examination of vaginal smears, ovaries, and uteri at the ninety-sixth hour. Those authors using the so-called "rapid tests"[6,7] found it possible to determine a rat test 48 hours after the injection by measuring ovarian and uterine weights. Injections of PMS have been shown to induce hyperemia of the immature rat ovary,[15,19,20] and the test can be read within 24 hours. The main criticism of this test is that, due to the variable concentration of gonadotrophins in mares' serum, only positive results are valid.

The review of hormone tests for pregnancy in mares shows that the method evaluated and described in the present paper has the advantage of being simpler and more reliable than any other hormonal methods found in the literature, as well as being the least costly. As far as simplicity is concerned, the results can be read with no difficulty by killing and examining a control mouse whenever there is doubt about the results in the test animals.

The strain of mouse used in the hormonal test is of great importance, since some strains were found to be unreliable for the test.[12] Before starting our seasonal pregnancy test program, we evaluate the colony of mice for sensitivity to gonadotrophins. Ten female mice, 22 days old, are given a single injection of 2 I.U. of commercial equine gonadin. If the mice of this colony can be used successfully for diagnosis of pregnancy, 48 hours later all 10 animals will show stimulated ovaries and uteri. The toxicity of mares' serum is so low for the mouse that in one year only three samples killed the mice before the test was read.

SUMMARY

A simple and reliable diagnosis test for pregnancy, based on the investigation of gonadotrophic hormones in the serum of pregnant mares, is evaluated and described. Three female Swiss mice, 22 days old, are each given a single subcutaneous injection of 0.5 ml. of blood serum. The mice are killed in 48 hours and examined for evidence of ovarian stimulation, and for uterine congestion and distention.

In testing 211 blood samples, collected between days 39 and 152 after breeding, the only error found was a false positive in a mare clinically diagnosed as having disturbances of the reproductive organs. Among all the systematic studies on the accuracy of diagnosis of pregnancy in mares, no method was found more simple to perform or more accurate than the method here reported.

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Observations on Bovine Cesarotomy

The advantages and disadvantages in operating on cows in three positions are compared.

VENTROLATERAL OR LINEA ALBA SECTION

Advantages.—The animal can not interfere by changing its position and the extradural (epidural) anesthesia usually eliminates the need for infiltration anesthesia, with its local swelling.

Disadvantages.—The casting and position fixing of the animal is comparatively difficult without extra assistance (the surgeon's hands get dirty); the extra-abdominal opening of the uterus is laborious; closure of the abdominal incision is difficult and time-consuming; and the larger dose of extradural anesthesia is dangerous.

LEFT FLANK SECTION, STANDING

Advantages.—There is little danger of intestinal protrusion; the uterus is easily extracted and incised; and less help is required.

Disadvantages.—If exhausted, the cow may fall, endangering the wound, and the necessary infiltration anesthesia causes a swelling of the operative area.

NORMAL LYING POSITION

Advantages.—The advantages are a clean operating area and easy extraction of the uterus.

Disadvantages.—Problems arise from the large dose of extradural anesthesia; from getting the animal to lie down in a proper position (with left flank exposed); and from turning in of the caudal margin of the incision, due to pressure from the stifle.—*H. Schmidt-Hoensdorf in Tierärztl. Umschau (July, 1959): 230.*

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After using the ventrolateral method for bovine cesarotomy for many years, at the University of Halle, Germany, 47 have recently been done with the animal standing (left flank). The advantages of the latter method exceed the disadvantages.—*F. Frendenberg in Tierärztl. Umschau (July, 1959): 227.*

Hydrops Amnii in Cows

Six cases of "hydrops uteri" were studied at a veterinary clinic in Norway. Two were first-calf heifers. All were pregnant 210 to 267 days. One cow aborted during transportation; the others were relieved by cesarotomy. One had twins; all calves were either dead at birth or died within a few hours. One cow died from peritonitis on postoperative day 13, another on day 18. One cow recovered even though her uterus ruptured while being handled. Paracentesis uteri was performed in 2 cows before cesarotomy, with removal of 12 to 15 gallons of fluid in 30- to 45-minute periods. In other cases, a small incision was made in the uterus to allow the relatively slow escape of fluid before the fetus was removed. In no case could the fetal membranes be detached; in 3 cases they were discharged in ten to 15 days. Most of the fetal membranes were edematous and 1 fetus had marked ascites.

Investigation indicated that the hydrops condition may be accompanied by kidney damage in the cow. In such cases there is a marked tendency to a decrease in the serum sodium level; the serum potassium level deviated from normal to above. In one case there was marked hemoconcentration. In most of the cases, there was a temporary hyperglycemia with glycosuria.—*K. J. Jakobsen and M. G. Simesen in Nord. Vet.-med., 11, (Feb., 1959): 81 (From a translation by E. K. L. Underbjerg.).*

Artificial Insemination in Swine

Using 2-day-old boar semen, pregnancy has resulted in 62 per cent of the sows and 56 per cent of the gilts. In a 14-county Ohio survey, it was learned that 74 per cent of swine breeders interviewed would use artificial insemination to some extent if it were available.—*Farm J. (Aug., 1959): 41.*

Clinical Data

Haemobartonella canis Infection in a Dog

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CANINE HAEMOBARTONELLOSIS has not been widely recognized in North America. There have been only limited reports of its recognition in New York[4,5,7] and in Minnesota.[1]

Two clinical forms of the disease have been described by the investigator[3] who first recognized the blood parasite, *Haemobartonella canis*, in dogs in 1928. In the acute form, there is a profound anemia which runs a comparatively short course and terminates in death. In the chronic form, the anemia persists over a long period, with numerous relapses. These organisms

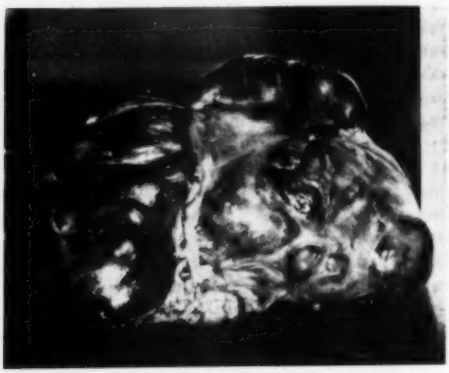

Fig. 1—Spleen of a dog, containing hemangioma; removed prior to development of haemobartonellosis.

rarely produce disease without previous removal of the spleen, and can be readily transmitted to suitable hosts by the inoculation of infected blood. They show a marked susceptibility to arsenical treatment. *Haemobartonella canis* is easily stained with Giemsa's or Wright's stain. They may appear as thin, straight, slightly curved, or branching rods, rings, chains of coccoid forms, or violin-bow forms on the erythrocytes and infrequently in the plasma. They usually appear in the blood in large numbers just before there is a decline in the total erythrocyte count, hematocrit, and hemoglobin values.

REVIEW OF THE LITERATURE

The widespread distribution of *H. canis* is indicated by reports of its occurrence in dogs from South America,[8] Europe,[3] India,[6] and Africa.[2] Canine haemobartonellosis has been reported four times in the United States. In New York in 1934, it was found in 3 of 4 splenectomized dogs.[4] In the same year in New York, the disease was identified in several splenectomized dogs.[7]

During the course of a plasmapheresis experiment conducted in 1935, the disease was confirmed in a dog that had not been splenectomized.[5] It was thought that the animal may have lost a protective substance liberated by the spleen through the steady loss of large amounts of plasma during the experiment. A spontaneous infection in a splenectomized dog was reported from Minnesota[1] in 1944. These workers could find no previous report of the disease in the western two thirds of the United States.

CASE REPORT

On Jan. 16, 1956, a spayed female Wire-Haired Fox Terrier, 13 years old, was examined at the Colorado State University Veterinary Hospital. The owner stated that the dog's abdomen had been gradually enlarging for about six months. Physical examination revealed an aged animal in fair condition. A systolic murmur was evident upon auscultation of the heart. The abdomen was distended, particularly on the right side. A tentative diagnosis of abdominal neoplasm was made and was subsequently confirmed by radiography.

On January 17, a tumor involving the entire spleen was removed (fig. 1). It weighed 3,200 Gm. and histopathologically was a hemangioma. The dog made a slow recovery and was discharged from the hospital on January 25.

On March 5, the dog was returned, since the owner observed that the animal was listless, ate little, and drank large quantities of water. The mucous membranes were pale and the cardiac murmur was pro-

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The authors acknowledge the assistance of Dr. B. O. Woodworth and Dr. J. C. Flint.

nounced. The owner had not noticed any blood loss in the body discharges. Examination of blood at that time revealed the following:

Hemoglobin	4 Gm./100 cc.
Hematocrit	11%
Erythrocytes	1,800,000/cmm.
Immature erythrocytes	29 per 100 w.b.c.
Leukocytes	12,500/cmm.
Neutrophils	
Segmented	58%
Bands	4%
Lymphocytes	33%
Monocytes	4%
Eosinophils	1%
Sedimentation rate	1 mm./30 min.
Mean corpuscular volume	61 cu. μ
Mean corpuscular hemoglobin	22 $\mu\mu$g.
Mean corpuscular hemoglobin concentration	36%

Increased activity of the bone marrow was indicated in the stained slide by the presence of 29 nucleated erythrocytes for every 100 leukocytes, marked polychromatophilia, and marked anisocytosis. Long, thin, straight, or slightly curved rods were seen on some erythrocytes, suggesting *H. canis*. No ova of internal parasites were seen on examination of the feces. The urine contained a small amount of albumin and occasional granular casts.

Despite the administration of 550 cc. of whole blood during the next seven days, the condition of the dog deteriorated, and euthanasia was performed.

Gross necropsy findings included a verrucose valvular endocarditis of the left atrioventricular valve, catarrhal gastritis, chronic interstitial nephritis, and anthracosis of the lungs. These observations were confirmed by microscopic examination of tissue sections of these organs. The liver exhibited microscopic evidence of fatty metamorphosis and increased amounts of hemosiderin.

EXPERIMENTAL INOCULATION

Two dogs were splenectomized and on the same day each was given 5 cc. of whole blood intravenously from the dog previously described. Subsequent examination of Giemsa-stained blood smears from these 2 dogs revealed erythrocytes containing long rods, rings, chains of coccoid forms, and violin-bow forms (fig. 2). These organisms, having the morphological characteristics of *H. canis*, appeared intermittently in the blood of 1 dog (S6-400) from days 15 to 48, and in the blood of the second dog (S5-150) from days 19 to 51, following splenectomy and inoculation with infected blood.

A marked reduction in total erythrocytes, hematocrit, and hemoglobin values was concurrent with the appearance of parasites in the blood (fig. 3). These values continued to decrease until postinoculation days 40 to 45, after which there was a gradual increase. Increased bone marrow activity during the period of anemia was indicated by the presence of increased reticulocyte counts, metarubricytes, Howell-Jolly bodies, polychromatophilia, and anisocytosis. Macrocytosis was evident during the recovery stage.

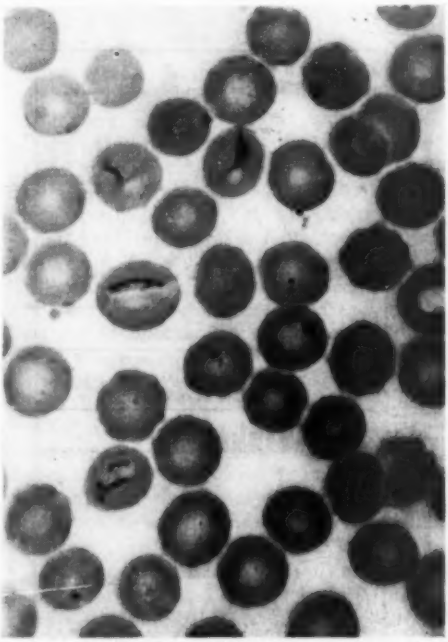

Fig. 2—Giemsa stain of blood smear from a dog, showing Haemobartonella canis organisms on the erythrocytes. x 1120.

The total leukocyte counts varied from normal to subnormal during the period when parasites could be demonstrated. The leukopenia appeared to be associated with a depression of all blood cell types.

Listlessness was apparent, the mucous membranes were pale, but no icterus was evident. These signs continued for approximately three months, after which a gradual improvement took place.

Blood from 1 of the experimentally infected dogs (S6-400) was inoculated into 2 splenectomized dogs and 1 nonsplenectomized dog. Anemia developed and bodies morphologically indistinguishable from *H. canis* appeared in the blood of 1 splenectomized dog (S6-477) in 17 days and in the second splenectomized dog (S472) in 20 days after inoculation. The nonsplenectomized dog (S6-457) remained normal for one year; then, after splenectomy, organisms having the morphological characteristics of *H. canis* could be demonstrated in the blood.

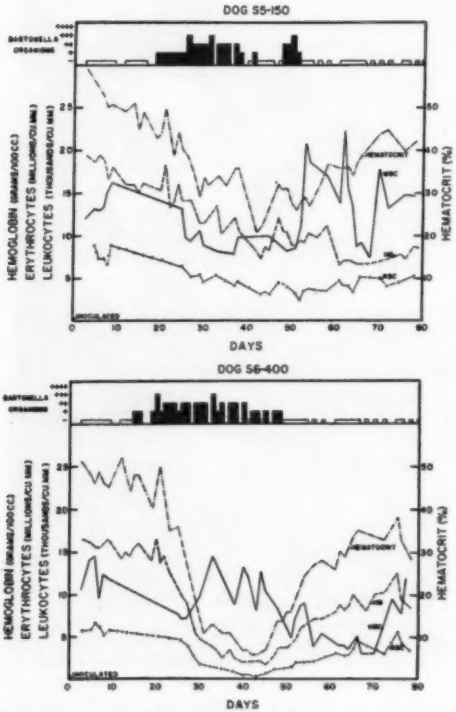

Fig. 3—Course of haemobartonellosis in 2 experimentally inoculated dogs.

DISCUSSION

Demonstration of parasitized erythrocytes in splenectomized dogs as early as the second or third day after intravenous inoculation of infected blood has been described by several authors.[4,5,8] Since blood smears were not examined until the third postinoculation day, it is possible that early appearance of *H. canis* could have been overlooked in the experimental animals.

The incidence of carriers of the *H. canis* organism in the canine population remains to be determined, as the infection is usually subclinical until the spleen has been removed. For the surgeon contemplating the removal of the spleen from a canine subject, or the investigator desiring to use splenectomized dogs for experimental procedures, it would be well to consider the development of haemobartonellosis as a possible complication.

SUMMARY

After removal of the spleen containing a hemangioma, a severe anemia developed in a dog. In stained smears of the blood, organisms having the morphological characteristics of *Haemobartonella canis* were demonstrated in the erythrocytes. Transmission of the infection to 2 experimentally splenectomized dogs produced an anemia. Demonstration of characteristic organisms in their blood resulted in the diagnosis of haemobartonellosis.

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Apomorphine as an Emetic in Dogs

A tablet (1/40 to 1/20 grain) of apomorphine dropped into the conjunctival sac of a dog will produce vomiting within three to eight minutes.—*C. J. Muller in J. South African V. M. A. (March, 1959): 41.*

Bacteriology, Clinical Syndrome, and Bismuth Therapy of Pyogenic Dermatitis of Dogs

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IN THE PAST few years, several articles have been published on the subject of cutaneous pyogenic infections in dogs.[6,9,11-13,17] These skin conditions, particularly in certain breeds of dogs, have consistently posed a relatively difficult problem to the veterinarian. Therefore, we undertook a systematic study of the predisposing conditions, etiological factors of microbiological origin, the characteristic differences seen in the clinical appearance of the skin lesions, and the recommended therapeutic procedures of established or purported value.

The incidence of pyogenic dermatitis in dogs varies from year to year. In those seasons when the condition is more prevalent, clinical signs are more prominent in a larger percentage of the affected animals. Underlying causes are, in essence, always the same, varying only according to circumstances and contributory involvements. Treatment has been exceptionally varied, results of therapy being equivocal in many instances.

PREDISPOSING CONDITIONS

From a clinical viewpoint, it is interesting that most pyogenic skin infections are found in short-haired breeds. In our own experience, Boxers, Dachshunds, Dalmatians, Bull Terriers, Labrador Retrievers, and Great Danes have comprised 75 per cent of the cases treated. The remainder included Irish Setters and German Shepherd Dogs, with Cocker Spaniels and Poodles rarely being seen with the affliction. In our estimation, the skin is more prone to damage in dogs with short-haired coats, because entry of the infecting microgenic organism is easier. Of course, this does not preclude the possibility that the respective breeds may have an hereditary susceptibility to pathogenic pyogenes, or that an individual animal may have inherited a sensitivity to pyogenic agents. Our data do not show that age or sex plays a definitive role in predisposing a dog to cutaneous pyogenic infection.

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The normal skin of dogs has a bacterial flora which varies considerably from one animal to another. We have identified the following microorganisms on the skin of dogs enjoying excellent health: streptococci, micrococci, Pseudomonas, Corynebacterium, *Proteus vulgaris*, and *Candida albicans*. Similarly, it has been reported that individual variations appear in the bacterial flora found on the normal skin of man.[20]

One writer[3] considers that the anatomic nature of specific areas of the skin is such that these locations serve as the principal sites of pyogenic invasion. Folds of the skin around the mouth and external ear canal provide an excellent environment for bacteria. And infected anal glands and sacs may be the source from which infecting agents are obtained for transfer to other parts of the body through the licking process.

In healthy animals, the different bacteria customarily found on the skin do not provoke pathological change. Only when the skin resistance is impaired by such means as minor hurts, abrasions, or decubital damage do the bacteria become harmful invaders. Thus, as a rule, pyogenic infection originates on the outermost portions of the extremities which have undergone minor injury in the course of normal movements of the dog, or on the lips, nose, ears, or other parts of the body which have become damaged by scratching or by other means.

In addition to the factors already mentioned which predispose to impairment of skin resistance to pyogenic pathogens, other contributing circumstances may be significant. Different nutritional deficiencies have been shown to be associated with the development of pyogenic dermatitis, especially in young dogs. Also, hormonal disorders, more particularly those in which excesses of gonadal hormones are elaborated, are sometimes related to the appearance of cutaneous infection by pyogenic agents. Further, certain intoxicants, e.g. thallium sulfate, predispose the skin to

infection with pyogenes. Finally, we have observed that in some cases even an individual hypersensitivity is apparently at least partially responsible for the progression of the pyogenic disturbance.

BACTERIOLOGICAL FINDINGS AND SENSITIVITY TESTS IN CUTANEOUS PYOGENIC INFECTIONS

The bacteriological and sensitivity test data presented were obtained in conjunction with, and prior to, the treatment of 7 dogs with clinical cases of cutaneous pyogenic infection. Direct cultures from the skin lesions were made in duplicate in each instance on equine blood agar and brain heart infusion broth. One set of cultures was incubated aerobically and the other maintained under anaerobic conditions according to the method of Brewer.[4] After 24 hours' incubation for the aerobic cultures and 48 hours' for the anaerobic cultures, the broth cultures were subcultured on blood agar and then incubated under identical conditions.

Our objective was principally to determine to which broad classification the pathogens associated with the infectious processes being investigated belonged. Hence, the organisms isolated from the blood agar plates were identified according to class only. These organisms and the incidence of their appearance in the seven specimens cultured were as follows: Staphylococcus, 7; Streptococcus, 4; Corynebacterium, 3; Escherichia, 1; Proteus, 3; and Bacillus, 2. Of the 7 cases studied, 4 different microorganisms were cultured from the skin lesions of 3 of the dogs. The culture from 1 other animal contained 3 different bacteria; and the lesions of the remaining 3 dogs carried 2 different microorganisms. In seven instances the Staphylococcus was the *aureus* variety, coagulase positive,[5] and nontypable to bacteriophage.[2] One was *Straphylococcus albus*, coagulase negative. Three of the streptococci were hemolytic and 1 nonhemolytic. The bacillus was gram-positive.

Sensitivity tests were performed for all coagulase-positive strains of Staphylococcus, two strains of Proteus, and one strain of hemolytic Streptococcus. The Sensi-Disc* method was employed in conducting the tests (table 1).

TABLE I—In Vitro Sensitivity to Selected Antibiotics and Chemotherapeutic Agents of Certain Microorganisms Isolated from Cultures Obtained from Dogs with Pyogenic Dermatitis

	Organism tested								
	Staphylococcus			Proteus			Streptococcus		
Drug tested	S*	MS	R	S	MS	R	S	MS	R
Penicillin	3	2	2	0	2	0	1	0	0
Dihydrostreptomycin	3	3	1	1	1	0	1	0	0
Chlortetracycline	6	0	1	0	0	2	0	1	0
Chloramphenicol	6	1	0	2	0	0	1	0	0
Oxytetracycline	6	0	1	0	0	2	0	1	0
Triple Sulfa	0	0	7	2	0	0	0	0	1
Neomycin	1	3	3	0	0	2	1	0	0
Bacitracin	2	4	1	0	0	2	1	0	0
Tetracycline	6	0	1	0	0	2	1	0	0
Erythromycin	5	1	1	0	1	1	1	0	0
Carbomycin	2	4	1	0	0	2	1	0	0
Nitrofurazone	1	1	1	0	1	1	1	0	0
Nitrofurantoin	3	1	0	0	1	1	--	--	--

*S=Highly sensitive; MS=moderately sensitive; R=resistant.

An analysis (table 1) shows that chlortetracycline (Aureomycin**), chloramphenicol (Chloromycetin†), oxytetracycline (Terramycin†), and tetracycline were equally active against Staphylococcus. Penicillin, erythromycin, dihydrostreptomycin, and nitrofurantoin (Furadant in†) were also quite effective against this organism in the *in vitro* tests. Proteus was particularly sensitive to chloramphenicol and a standard combination of three sulfonamides. All agents tested, with the exception of the sulfonamide preparation, were effective against hemolytic Streptococcus.

*Baltimore Biological Laboratories, Baltimore, Md.; **Aureomycin is produced by Lederle Laboratories, Pearl River, N.Y.

†Chloromycetin is produced by Parke, Davis and Co., Detroit, Mich.; Terramycin by Pfizer Laboratories, Brooklyn, N.Y.; Furadantin by Eaton Laboratories, Norwich, N.Y.

CLINICAL SIGNS OF PYOGENIC DERMATITIS

There are essential and distinguishing variations in the clinical appearance of pyogenic dermatitis. Generally, we recognize two types: superficial pyogenic dermatitis and deep pyogenic dermatitis.

Superficial Pyogenic Dermatitis.—This classification is descriptive of those cutaneous manifestations which usually represent a secondary infection imposed on a primary damage to the skin. Consequently, the lesions are consistently situated in specific areas subjected to considerable scratching, such as head, face, nose, upper and lower lip, ears, perineal region, and back, or else are found on those body structures exposed to pressure, such as elbow, stifle, and hock. Axillary and inguinal areas may also be the site of the lesion, when the constant friction these portions of the body undergo produces skin irritation. Mechanical, chemical, or physical damage on and between the toes or to the pads may provide the gateway for the pyogenic infection. Licking of the lower sections of the involved extremities enhances the possibility of infection being spread to other receptive sites.

The general condition of the animal affected with superficial pyogenic dermatitis does not deteriorate. When extensive areas of the skin become involved, fever and enlargement of adjacent lymph glands may be observed in some instances.

Deep Pyogenic Dermatitis.—This form of the disease is characterized by a penetrating suppurative inflammation of the skin involving the hair follicles, sebaceous glands, or deeper parts of the cutaneous and subcutaneous tissues. Symptoms of acne, furunculosis, or abscess are further distinguishing signs. These deep suppurative skin lesions may fuse, especially in the subcutaneous areas, forming fistulous tracts opening on the outer surface and discharging pus mixed with blood. Such serious involvements are located mainly on the outer parts of the extremities; between the toes; on the coronet; in the carpal, elbow, stifle and hip regions; and in the vicinity of the anus. In severe cases they may be found all over the body surface. They may develop unilaterally or may be distributed bilaterally in symmetrical patterns.

Deep pyogenic dermatitis originates as a painful inflammatory edema. Soon abscesses of various size form. Initially these contain a grayish fluid. As the condition progresses, a yellowish purulent fluid develops and appears mixed with blood. The appearance of bleeding ulcers is an additional sign of the development of the disease. Through the process of rubbing or licking, or as the result of mechanical damage, the infection may readily spread to adjacent areas or even extend to more distant parts of the body. The lips are particularly apt to become involved. In cases of long duration the cutaneous inflammation assumes all the features of a chronic indurative dermatitis. The skin in the infected regions becomes hard and thickened, resembling scleroderma.

When deep pyogenic lesions have been found on long-haired dogs, they have been located on the posterior portion of the abdomen and in the axillary region. The lesions occur as widely scattered pustules which soon develop as acne and furunculosis. In some cases, the lesions initially appear as small papules, then progress to large nodules, and finally disintegrate into ulcers covered with sanguineous pus.

In addition to the typical topical developments, animals having deep pyogenic infections also become feverish, and their lymph glands become enlarged. An increase in white blood cells and a decrease in red blood cells is also observed. These systemic findings are the more pronounced when the infectious process has extended to large areas of the body surface. When the pyogenic condition persists for long periods of time, the animal may also develop an emaciation.

TREATMENT OF PYOGENIC DERMATITIS

Choice of therapy depends upon the type of infection to be treated and the character of the skin lesions. It is expedient that a careful diagnosis be made. Otherwise, results of treatment may be disappointing, for it is apparent that any of several different microorganisms may be responsible for the pyogenesis in a given animal, and different kinds of bacteria are less sensitive to some available therapeutic agents than others. It is most advisable to make a bacteriological culture from the skin lesions in all instances, in order to determine the types of bacteria present, particularly the predominant organism.

Superficial Pyogenic Dermatitis.—It is relatively easy to effectively treat dogs

having this form of dermatitis. It is important to remove the causative factors from the injured skin, and then take measures to insure that the infected areas are protected against further mechanical irritation. Various protective devices may be employed for this purpose. On lower parts of the extremities, helpful protection can be accomplished by application of a loose bandage. In some instances the administration of sedatives or tranquilizers will materially assist in obtaining the dog's cooperation in the treatment of its infection. Under their calming influence the dog can be bandaged more easily and is less inclined to attempt to rid himself of topical medications.

Numerous bacteriostatic or bactericidal preparations are available for the local treatment of superficial pyogenic dermatitis. Further, the user has a rather wide selection of dosage forms from which to choose—powders, ointments, creams, solutions, lotions, sprays. Among the marketed products found useful in the topical control of cutaneous pyogenic infections are the following: isopropyl alcohol, STA (salicylic acid 8, tannic acid 8, 70% alcohol 100), 5 per cent alcoholic solution of methylrosaniline chloride (crystal violet, gentian violet), hexetidine (Triocil‡), ointment or spray, a combination of pentaethyleneglycol ether of dichlorocresol and dodecyldimethylcarbethoxymethyl ammonium bromide (Fongeryl‡), chlortetracycline spray, calcium polysulfide, and hexachloro dihydroxy diphenylmethane (Led-O-San§), 5 per cent alcoholic solution of resorcinol, tyrothricin, a solution containing benzyl benzoate, tyrothricin and benzocaine (Tyroscabe§), nitrofurfuryl methyl ether (Furaspor§), polyalkyleneglycol iodine complex (Weladol§).

In general, the treatment of superficial pyogenic dermatitis does not encompass systemic therapy. However, in those animals where extensive areas of the skin are involved and fever is encountered, antibiotics have been administered parenterally in conjunction with the application of topical medication. The antibiotic injected on each occasion was selected from those included in the sensitivity tests (table 1).

Deep Pyogenic Dermatitis.—It has always been exceptionally difficult to cure this form of cutaneous pyogenic infection. It is imperative that the problem be approached both topically and systemically. Systemic therapy is particularly important in those dogs in which extensive areas of the skin are involved and deep, suppurative lesions are prominent.

Local Treatment.—The same topical preparations used in the treatment of superficial pyogenic dermatitis are acceptable for application in those cases of deep pyogenic dermatitis. In undermined cases, nitrofurazone (Furacin§) solution, a mineral oil suspension of sulfanilamide (Sulvetil*) with penicillin and streptomycin, or enzyme preparations have been injected through a blunt needle directly into the fistulous tract. When the lesions are localized between the toes, it has been found that hexetidine spray permits easy application, and produces favorable results. In long lasting cases of chronic, indurative, pyogenic dermatitis, iodine creams such as polyalkyleneglycol iodine complex, have been massaged into the thickened skin. Severe cases of interdigital acne, furunculosis, and paronychia have been treated locally by daily bathing of the affected feet in a 0.5 per cent solution of potassium permanganate.

The use of x-ray therapy in the control of cutaneous pyogenic infection should not be overlooked and has been favorably reported.[21,22] Animals with acute cases of severe inflammatory skin lesions were treated with small doses of irradiation (30 roentgen units) daily until the inflammation subsided. Thereafter the x-ray dosage was increased to four to six doses of 180 to 240 roentgen units, 0.1 mm. Cu filter, 30 cm. focal skin distance, at two- to three-day intervals. Treatment was repeated at six-week intervals as necessary. Deep, undermined, chronic cutaneous pyogenic infection, with sclerotically thickened skin had to be treated with six to ten single doses of 180 to 240 roentgen units, 0.1 mm. Cu filter, 30 cm. focal skin distance. Treatment was administered on alternate days. It was reported that 77.4 per cent of animals with severe pyogenic dermatitis recovered following this therapy.[22]

‡Triocil is produced by Warner-Chilcott Laboratories, Morris Plains, N.J.; Fongeryl by E. Fougera and Co., Hicksville, N.Y.

§Led-O-San is produced by Lederle Laboratories, Pearl River, N.Y.; Tyroscabe by Merck Sharp and Dohme, Div. of Merck and Co., Philadelphia, Pa.; Furaspor and Furacin by Eaton Laboratories, Norwich, N.Y.; Weladol by Pitman-Moore, Indianapolis, Ind.

*Sulvetil is produced by Abbott Laboratories, North Chicago, Ill.

Systemic Treatment.—In the past, sulfonamides, such as azosulfamide (Neoprontosil**) and sulfathiazole, among others, were administered systemically to animals affected with deep pyogenic dermatitis. Some animals responded to sulfonamide therapy of this type; other not only failed to improve while receiving these sulfonamides, but the condition progressed to a chronic, proliferative, pyogenic dermatitis. Since the advent of antibiotics, these drugs have been the agents of choice. Selection of antibiotic for use in the treatment of the individual case has been made from among those listed (table 1), type of infecting organism being the guide in each instance.

Autogenous vaccines have also been considered when systemic therapy has been necessary. An autogenous vaccine was prepared for use in the 7 dogs on which bacteriological data were obtained by us. It was made by growing the *Staphylococcus aureus* coagulase-positive strain on nutrient agar slants overnight and then removing the growth in 2 ml. of normal saline solution. The suspension was well shaken, to break up clumps and insure uniformity, and then heated at 60 C. for one hour. Aerobic and anaerobic cultures were made of the heated suspension on nutrient agar slants and litmus milk. When the cultures showed no growth within 48 hours, the bacterial suspension was standardized and appropriately diluted for parenteral administration. A concentration of 2 billion bacteria per milliliter was employed. Ascending doses of 0.1 ml. were injected subcutaneously every third day until a total of 1 ml. had been given. Thereafter, the dog was given 1 ml. weekly, subcutaneously, until a total of 20 ml. had been administered. No side effects of consequence were observed, and 5 of the 7 animals treated in this manner responded favorably to the vaccine treatment.

Enzymes have in recent years been tried in the treatment of stubborn cases of cutaneous pyogenic infections.[25] The following have been injected intramuscularly: pancreatic dornase, streptokinase, streptodornase, and a mixture of the latter two (Varidase†, Varizyme†). In some severe cases of pyogenic dermatitis, enzymatic treatment was successful, particularly when antibiotics were employed as adjunctive therapy.

BISMUTH THERAPY OF PYOGENIC DERMATITIS

Of the different heavy metals which have at one time or another enjoyed popularity as therapeutic agents, bismuth has perhaps gained the most acceptance. It is generally less toxic than other heavy metals, and desired blood titers of the element can quite readily be obtained. Until the discovery of penicillin, bismuth, alone or in conjunction with arsenicals, was commonly used in the treatment of syphilis, since it had been shown to possess both spirocheticidal and spirochetostatic activity. It has also been efficacious in several different dermatological diseases. For the most part, bismuth has been administered by injection, because it has proved difficult to prepare satisfactory oral preparations. The inherent disadvantages of parenteral therapy, however, provided the stimulus to continue the search for a bismuth compound that would offer the advantages of oral treatment.

In the early 1940's, it was found that a bismuthyl salt of triglycollamic acid was a particularly effective oral form of bismuth.[14,26] For more than a decade, sodium bismuth triglycollamate (Bistrimate‡) has been favorably regarded in human dermatology.[1,7,8,10,15,16,18,19,23,24,27-29] It has been found to be well tolerated and to rapidly establish effective blood concentrations of bismuth. Daily administration of the drug assures maintenance of therapeutic levels of the heavy metal. It has been extensively used in the treatment of lupus erythematosus, lichen planus, scleroderma, verrucae vulgares, and certain other inflammatory dermatoses.

In our own experience, we had successfully used this drug in the treatment of 2 rabbits with syphilis, 4 dogs with demodectic mange, and 4 dogs with multiple warts. Based on these clinical observations, we were prompted to try it in animals suffering from other skin disturbances, including pyogenic dermatitis.

Over the past three years we have evaluated the therapeutic usefulness of this product as the systemic component of

**Neoprontosil is produced by Winthrop Laboratories, Div. of Sterling Drug, New York, N.Y.

†Varidase and Varizyme are produced by Lederle Laboratories, Pearl River, N.Y.

‡Bistrimate is produced by Carroll Dunham Smith Pharmacal Co., New Brunswick, N.J. The drug will be available to veterinarians as Oribis from Pitman-Moore, Indianapolis, Ind.

treatment for cutaneous pyogenic infections, employing it in place of antibiotics systemically. In that time we have treated 68 dogs with it, and our results have been distinctly impressive. Again, it must be stressed that the effectiveness of the preparation in controlling pyogenic dermatitis presupposes accurate diagnosis.

Sodium bismuth triglycollamate has been administered orally as uncoated tablets, each containing 410 mg. of this double salt, equivalent to 75 mg. elemental bismuth. In our studies, dosage has varied according to the size, age, and general condition of the animal being treated. For dogs of an average size, 3 tablets daily, in divided dosage, have been administered for four days, then 1 tablet daily for ten to 20 days. In stubborn cases, this regimen of treatment has been repeated after two to four weeks of rest. In a few instances, the initial dosage has been 4 tablets daily. The drug has been well tolerated by the dogs receiving it, and no signs of toxicity or discomfort have been noted on the dosage schedule outlined.

As a rule, response to the oral administration of the drug has been apparent after one to two weeks of treatment. The suppuration and the purulent discharge from the skin lesions, especially the fistulous tracts, are shortly replaced by serosanguineous fluid. Soon thereafter this fluid dries, leaving grayish crusts over the affected areas. When this stage has been reached, the crusts are removed by the careful application of oily preparations. Soothing topical agents are then continued until the return of healthy skin tissue is apparent.

All of the 68 animals we treated presented the typical picture of deep and undermined pyogenic dermatitis. In 14, the condition was of long duration. They had been resistant to all therapies tried over the course of many months and had finally been given up as "hopeless" and assigned for euthanasia. However, it was decided to try bismuth therapy to see if these animals could possibly be saved. Ultimately, 3 had to be euthanatized because of their advanced age, generally deteriorated condition, and serious internal disorders, among them gastroenteritis and chronic interstitial nephritis. The other 11 responded well to bismuth therapy, were completely recovered in four to six weeks, and were returned to their owners.

The remaining 54 dogs we treated with oral bismuth fully recovered from their serious pyogenic condition under the influence of therapy with this heavy metal. Recurrence of the skin disturbance has not been seen to date in any of these animals.

With the results we have observed, it may be concluded that the oral administration of sodium bismuth triglycollamate offers the veterinarian an excellent systemic method of treating deep pyogenic dermatitis.

SUMMARY

Attention is drawn to the conditions predisposing to the development of cutaneous pyogenic infections in certain breeds of dogs. Clinical signs to look for in establishing a correct diagnosis are described. The identity of certain pathogenic bacteria isolated from typical skin lesions was confirmed by the application of accepted culture techniques. Emphasis is placed on the importance of carefully distinguishing between superficial and deep pyogenic dermatitis when considering treatment regimens.

The different systemic and topical drugs and types of therapies used in treating either form of the disease are discussed. Particular reference is made to the therapeutic value of sodium bismuth triglycollamate (Bistrimate) as a systemic agent in the treatment of deep pyogenic dermatitis. Average-size dogs were given 1 tablet t.i.d. for four days, then 1 tablet daily for ten to 20 days. In stubborn cases, this dosage pattern was repeated after two to four weeks of rest. The drug was well tolerated and signs of toxicity or discomfort were not apparent. Of 68 dogs treated with this oral bismuth product, 65 fully recovered. Fourteen of the treated animals had been classified as "hopeless" because of failure to respond to all other recommended therapies. After four to six weeks of bismuth treatment, 11 of these dogs were returned to their owners completely restored to health.

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Treatment of Filaroidiasis in Dogs

Six Boxer dogs, 4 months to 5 years old, infected with *Filaroides osleri* were treated with cyanacethydrazide (Dictycide), 1 Gm./lb. of body weight daily. The discomfort from the injection was eliminated by using warm water to make the solution. Four dogs, treated at the onset of coughing, recovered after only 2 doses. One dog required 3 daily doses which were repeated three weeks later. A 2-year-old bitch, which was emaciated and had been coughing for six months, was treated for five consecutive days and this was repeated in three weeks. She showed marked improvement and the cough disappeared although bronchoscopy later revealed many eggs in the tracheal debris.—*J. E. Dorrington in J. South African V. M. A. (March, 1959): 27.*

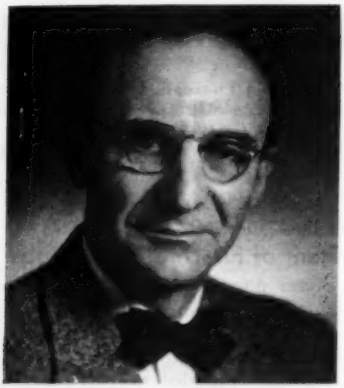
Tuberculin Testing in Fowl

A triple injection wattle tuberculin test is advocated in testing birds. An intradermal injection of 0.1 ml. of tuberculin is made on three successive days, alternating the sides. Results were read 24 hours after each injection and reactors were eliminated. Of 1,071 fowl so tested, 54 reacted to the first injection, 48 to the second, and 36 to the third. Necropsy confirmed tuberculosis in 65 of the 75 reactors examined.—*Vet. Bull. (June, 1959): Item 1666.*

Editorial

Dr. W. A. Aitken Retires

On October 1, 1959, Dr. W. A. Aitken retired from the AVMA central office staff after having served as editor-in-chief from February, 1952, to July, 1959, and then as editor emeritus. A nationally known field authority on swine diseases, he had conducted an extensive practice at Merrill, Iowa, for 21 years and was serving as the Chairman of the AVMA Council on Education when he was asked to fill the editorial position.



Dr. W. A. Aitken

Dr. Aitken received his D.V.M. degree from Iowa State College in 1917 and served with overseas military forces in World War I. Upon returning to civilian status, he was appointed assistant state veterinarian in the Iowa State Bureau of Animal Industry and so served until he joined the faculty at Iowa State College late in 1919. He first taught anatomy, then surgery, and was associate professor of surgery when he decided to enter practice in 1931. From 1931 to 1938, he was secretary of the Interstate V. M. A. (Iowa, Minnesota, and North and South Dakota); in 1940, he served as its president. He was elected to the AVMA Council on Education in 1946.

By 1952, Dr. Aitken had become well known to veterinarians nationally. His work with the Council had brought him into contact with educators in both the United States and Canada, and his teaching experience and years of practice in the corn belt provided him with a keen insight and understanding of the nature and problems of his profession. An accomplished speaker and author of scientific reports, he was a natural candidate for the editorial position, but only after considerable urging by his friends did he accept the offer of AVMA employment.

Foremost among the factors causing him to accept the position "for not more than five years" was his desire to contribute in some way to the better understanding or control of such diseases as shipping fever, erysipelas, and hog cholera.

During the period that Dr. Aitken was editor-in-chief, this goal was achieved. By means of editorials, editor's notes, selection of manuscripts, preparation of abstracts, and personal contact with authors, he directly or indirectly stimulated much of the subsequent work on these diseases. At the same time, he applied himself to the task of editing the Journals with such zeal and exclusion of other interests that it became a way of life. He saw the JOURNAL of the AVMA grow in size from 12 issues a year to 24; and the *American Journal of Veterinary Research*, from four to six issues annually. Realizing that the readers tend to accept without question most of the material published in AVMA Journals, he felt obligated to scrutinize and to challenge personally every sentence of submitted material and he refused to permit personal convenience to interfere with the task.

That the success of Dr. Aitken's editorial career has equalled or surpassed his previous endeavors can not be denied. That a grateful Association can adequately express its thanks seems subject to question. However, at the 96th Annual Meeting, the AVMA House of Delegates, on behalf of the membership, unanimously passed a resolution of commendation which read, in part:

> WHEREAS, The publications of this Association have, under his editorship, not only shown favorable growth but have become more firmly established in an enviable position among international scientific journals of quality and integrity, and
>
> WHEREAS, Dr. Aitken has applied himself to this service with extraordinary zeal and selfless dedication; Therefore, be it
>
> RESOLVED, That the House of Delegates of the American Veterinary Medical Association in convention assembled at Kansas City, Missouri, express their thanks and appreciation for Dr. Aitken's untiring efforts in the interest of his profession, this Association, and its publications.

To this, the personal friends and colleagues of Dr. W. A. Aitken add their best wishes and thanks for a job well done.

Abstracts

Isolation of a Cytopathogenic Agent from Swine Enteritis

In an effort to find the relationship between animal and human enteritis, swine were studied as a possible source of infection for man. A cytopathogenic virus was isolated from an episode of enteritis in suckling pigs by the use of monkey kidney and swine tissue culture cells. This differs from other swine enteric viruses previously isolated and reported elsewhere. Experimental infection of this virus in suckling pigs was unsuccessful, but in 1 of 2 monkeys diarrhea and rise in homologous antibody was obtained.—[*C. Moscovici, A. Ginevri, and V. Mazzaracchio: Isolation of a Cytopathogenic Agent from Swine with Enteritis. Am. J. Vet. Res., 20, (July, 1959): 625-626.*]

Gastrointestinal Parasites of Cattle

The abomasums and small intestines of 100 cattle, collected at slaughter, were examined for parasites. These cattle included adults, yearlings, and calves. Trichostrongylus spp. was found to be most numerous in abomasum while Cooperia spp. was most numerous in small intestine.—[*R. R. Bell, R. D. Turk, and T. J. Galvin: Incidence of Certain Gastrointestinal Parasites of Cattle. Am. J. Vet. Res., 20, (July, 1959): 766-767.*]

Bacteremia in Pregnant Sheep

In ewes inoculated orally at the beginning of the fifth month of gestation, bacteremia resulted in 6 (46.1%) of 13 ewes given tissues from aborted lambs infected with *Vibrio fetus* and in 32 (65.-3%) of 49 ewes given *V. fetus* culture.—[*Victor A. Miller, Rue Jensen, and James J. Gilroy: Bacteremia in Pregnant Sheep Following Oral Administration of Vibrio Fetus. Am. J. Vet. Res., 20, (July, 1959): 677-679.*]

Electron Microscopy of the Pulmonary Alveolar Wall

Lung tissue from 10 albino rats was fixed for 30 minutes in a 1 per cent buffered solution of osmium tetroxide, dehydrated in ethyl alcohol of ascending grades, embedded in methacrylate, and examined with an RCA, EMU 3c electron microscope.

This study indicates that the pulmonary alveolar wall consists of epithelium, basement membrane, capillary endothelium, and a supporting framework of fibers. In addition, the interstices of the wall, in which the collagenous and elastic fibers are present, contain occasional cellular elements designated as mesenchymal cells.

The epithelium of the alveoli is continuous and composed of cells which possess long and tenuous cytoplasmic extensions. These attenuated processes form the major part of the epithelial lining. Two main variants of alveolar epithelial cells are recognized: (1) polygonal cells, the main body of which is located in the niches of alveoli, and (2) elongated forms, disposed usually along the open segment of the wall. The perinuclear cytoplasm of the former type displays numerous opaque inclusions with a laminated internal structure. A junction between two adjoining epithelial cells is represented by a narrow cleft delineated by two parallel plasma membranes. Structurally identical boundaries exist between the endothelial cells.

The capillary endothelium is also continuous and attenuated in a manner similar to that observed in the alveolar epithelium. The endothelial and the epithelial linings are separated by a homogenous and uninterrupted basement membrane.—[*A. M. Watrach and A. E. Vatter: Electron Microscopy of the Pulmonary Alveolar Wall. Am. J. Vet. Res., 20, (July, 1959): 723-735.*]

Infertility in Cattle in Alabama

Cultures from the external os of the cervix of 1,359 infertile cattle yielded bacteria on 383 (28.-1%) occasions. Twenty-nine different species of bacteria were recovered. The most common species were nonhemolytic *Staphylococcus albus, Escherichia coli,* Streptococcus—group E, and Vibrio. The breeding efficiency was not affected when a *Streptococcus pyogenes* and a coagulase-positive *Staphylococcus aureus* isloated from infertile cows and a diplococcus from a cow with chronic metritis were used to inoculate the cervices or the uteri of experimental heifers.

Routine intrauterine infusions of (1) 200,000 units of penicillin and 1 Gm. of streptomycin, (2) 16,000 units of polymixin and 800 units of bacitracin, (3) 1 Gm. of chloramphenicol, and (4) 100 or 400 mg. of tetracycline hydrochloride did not affect the breeding efficiency of cattle.

Necropsy examination of 24 genital organs indicated that "nonspecific" bacterial infections were not the major cause of infertility in the cattle studied. Six cystic corpora lutea indicated that hormonal disturbances or physiological dysfunctions may have been involved.—[*George K. Kiesel and William G. Dacres: A Study of Infertility in Cattle in Alabama. Am. J. Vet. Res., 20, (July, 1959): 760-765.*]

Bovine Gastrointestinal Parasites. XXII

Data are presented on the average daily rate of consumption of salt and of a 10:1 salt-phenothiazine mixture by cattle maintained under the same conditions of management over a period of five years. Animals were individually isolated during 21 months of this time.

There was a wide variation in the amounts of both salt and of the salt-phenothiazine mixture consumed by different individuals in the same pe-

riod and by the same individual in different periods.

The amount of the mixture consumed was often less than that necessary to supply the 0.5 Gm. of the drug necessary to control larvae development, indicating that a salt-phenothiazine mixture is not a reliable method of administering the drug for maximum effectiveness.

A commercial salt-phenothiazine-molasses mixture was not consumed more consistently or readily than was the salt-phenothiazine alone.

There was no consistent difference in the rate of consumption of the salt-phenothiazine mixture during different periods or seasons of the year.—*[Roy L. Maybew: Studies on Bovine Gastrointestinal Parasites. XXII. Rate of Consumption of Phenothiazine in Salt-Phenothiazine Mixtures by Cattle. Am. J. Vet. Res., 20, (May, 1959): 498-504.]*

Hemolytic Test in Canine and Bovine Leptospirosis

This report describes comparative hemolytic (HL) and microscopic agglutination (MA) titrations on canine and bovine serums from a relatively small number of experimentally infected animals and a fairly large number of randomly selected bovine serums. The HL and MA antibody titers peaked at comparable levels and times in serums from 13 dogs experimentally infected with *Leptospira icterohaemorrhagiae* and 8 calves experimentally infected with *Leptospira sejroe*. However, HL titers decreased at more rapid rates than MA titers. Comparative HL and MA titrations on 653 bovine serums showed 77 per cent general agreement. Possible significance of these findings is discussed.—*[C. D. Cox: Evaluation of the Hemolytic Test in Canine and Bovine Leptospirosis. Am. J. Vet. Res., 20, (July, 1959): 747-749.]*

Effect of Synthetic Corticosteroids in Cows

The effects of intramuscular injections of 50 and 100 mg. of prednisolone and 25 and 100 mg. of 9α fluorohydrocortisone, 9α fluoroprednisolone, and 6 methyl prednisolone are described. Nineα fluoroprednisolone was approximately four times as potent in its ability to induce a rise in blood glucose and to elevate leukocyte numbers when compared with prednisolone and 9α fluorohydrocortisone. Six methyl prednisolone did not alter blood glucose values or leukocyte numbers significantly. All compounds produced various degrees of neutrocytosis.

The greatest and most prolonged effect on neutrophil numbers was caused by 9α fluoroprednisolone. No changes in plasma sodium or potassium were detected following the administration of the synthetic corticoids tested.—*[Dennis D. Goetsch, L. E. McDonald, and George Odell: The Effects of Four Synthetic Corticosteroids on Leukocytes, Blood Glucose, and Plasma Sodium and Potassium in the Cow. Am. J. Vet. Res., 20, (July, 1959): 697-701.]*

Books and Reports

Clinical Veterinary Surgery

Written by the well-known British veterinarian, this book should provide a valuable addition to the veterinarian's library. However, a complete appraisal should perhaps await the publication of volume 2, in which surgical techniques and operative procedures will be described in detail.

The younger veterinarian will find much value in the section on lameness.

It is perhaps in the discussion of specific conditions that the book loses its value to the reader on the western side of the Atlantic ocean. For instance, I doubt if anyone on this continent will agree with Mr. Smythe when he says that when sesamoid bones are fractured, the fetlock sinks to the ground. The author states that fracture of the *os pedis* is seldom encountered except as a result of ostitis introduced by infection. All equine practitioners here will strongly disagree with this statement.

That there are omissions is inevitable in a volume of this nature; for instance, the American worker will be surprised to find no mention of fracture of the small metacarpal bones in horses.

The views expressed by the author on such conditions as fracture of the *os pedis*, fractured sesamoids, and cause of fracture, and deviation of the bovine penis will not likely be readily accepted here.

When an American book is reviewed by a British worker, the almost constant complaint is that little attention is paid to British literature. It would seem to me that this book represents a retaliation in that the author used several reports from the *Veterinary Record*, many of which are of the case report variety, and yet ignores much of the work which has been published on this side of the Atlantic and accepted all over the world.—*[Clinical Veterinary Surgery. By R. H. Smythe Vol. I. 355 pages. Charles C Thomas, 301 E. Lawrence Ave., Springfield, Ill. 1959. Price $9.00.]*—F. J. MILNE.

Medical Electrical Equipment

This book, written from the standpoint of British apparatus, attempts to summarize principles and routine maintenance of hospital equipment. Included are portions on lighting, refrigeration, x ray, endoscopes, sterilizing equipment, air conditioning, dark room equipment, and others. The supply voltage referred to in all cases is, of course, 200 to 250 volt alternating current at 50 cycles per second, necessitating some translation. Some sections may be of some use to small animal practitioners; e.g., construction of antistatic operating room floors and equipment.—*[Medical Electrical Equipment. By R. E. Malloy. 312 pages. Philosophical Library, Inc., New York, N.Y. 1958. Price $15.00.]*—A. F. SELLERS.

THE NEWS

Dr. W. H. Riser Elected First President of the International Association of Small Animal Specialists

Dr. Wayne H. Riser (ISC '32) was elected president of the International Association of Small Animal Specialists, after its formation in Madrid, Spain, last May.

Small animal practitioners from all over the world convened at the XVIth International Veterinary Congress in Madrid.

Representatives from most of the 39 countries who now have small animal associations were present and the International Association of Small Animal Specialists resulted. Its basic objectives are two:

1) To bring about a better understanding and exchange of literature and information between small animal practitioners on a world-wide basis.

Dr. Wayne H. Riser

2) To help the organization and program of the future "World Veterinary Congresses." (This year the Congress unanimously adopted the title, World Veterinary Congress, in preference to its former designation as the International Veterinary Congress.)

Dr. W. Brian Singleton, London, England, was elected secretary-treasurer of the organization and Dr. William G. Magrane, Mishawaka, Ind., was selected as the American Animal Hospital Association's representative.

Dr. T. Lloyd Jones Honored at Canadian V.M.A. Meeting

At the recent meeting of the Canadian V.M.A. held in Guelph, Ont., July 20-22, in conjunction with the official opening of the new medical-surgical wing of the Ontario Veterinary College, Dr. Trevor Lloyd Jones, principal of the College, was made an Honorary Associate Member of the Royal College of Veterinary Surgeons.

Dr. T. Lloyd Jones

This signal honor was bestowed on Dr. Jones by Dr. J. N. Ritchie, president of the Royal College of Veterinary Surgeons and chief veterinary officer of the United Kingdom.

There are fewer than 30 Honorary Associate Members living. This distinction is reserved for those veterinarians considered to have rendered outstanding service to the profession and also to a very few laymen. For example, Sir Winston Churchill is numbered among the latter group.

The College felt that Dr. Jones' distinguished record in the field of veterinary education both in Canada and at the international level merited recognition. He is the third principal of the Ontario Veterinary College to have been honored in this way. His predecessors were: Drs. Andrew Smith (1881); and A. L. MacNabb (1949).

The Royal College of Veterinary Surgeons is the governing body and licensing authority of the veterinary profession in Great Britain. It examines applicants for membership, but does not teach. Its disciplinary committee has statutory powers and determines who may or may not practice the "art and science" of veterinary medicine.

(See the JOURNAL, *June 1, 1959, p. 532, for the announcement of the Canadian V.M.A. meeting).*

AMONG THE STATES AND PROVINCES

Iowa

North Central Iowa Association.—The North Central Iowa V.M.A. met at the Warden Hotel in Fort Dodge on April 16. Registration totaled 112. Among the speakers and their respective subjects were: Drs. Roger A. Grant, practitioner, Wyoming, Ill.—general sheep practice; Ithel A. Schipper, North Dakota Agricultural College, Fargo—prevention of shipping fever in cattle; and W. P. Switzer, Iowa State College, Ames—PPLO and Virus Pneumonia in Swine.

The following panel discussion was also held: What is New in the Field of. . .

Immunizing agents—Dr. S. Sinha, Kansas City, Mo.
Antibiotics—R. A. Sauter, Omaha, Neb.
Anthelmintics and Parasiticides—P. H. Allen, Fort Dodge.

Officers for 1959-1960 are: Drs. J. R. Rosdail, Pomeroy, president; D. J. McKenna, Mallard, president-elect; and H. Engelbrecht, Fort Dodge, secretary-treasurer.

s/H. ENGELBRECHT, *Secretary.*

Maine

Dr. W. C. Hoag Appointed Assistant Director for Production at Roscoe B. Jackson Memorial Laboratory.—Dr. Warren G. Hoag (COR '44) superintendent of animal health at the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Maine, was recently appointed assistant director for production at the research center.

Dr. Hoag is pictured at work in the Roscoe B. Jackson Memorial Laboratory at Bar Harbor.

He will direct the production of laboratory mice which the Jackson Laboratory supplies by the million to other research institutions throughout the world. He will devote about half of his time to his new post and the balance to research in animal health and disease control and prevention. In addition, he will supervise an extensive study of individual disease agents in mice.

A member of the Jackson Laboratory staff since 1957, Dr. Hoag received his Master of Public Health degree from the Harvard School of Public Health the same year.

Michigan

State Association Meeting.—The seventy-seventh annual meeting of the Michigan V.M.A. was held at the Bancroft Hotel in Saginaw, June 24-26, 1959.

Participating in the Association's program were the following veterinarians: Drs. W. W. Armistead, Michigan State University—veterinary medicine in Michigan; O. R. Adams, Colorado State University—surgery in cattle; A. G. Misener, Chicago, Ill.—trends in practice; J. B. Herrick, Iowa State College—sterility in cattle; L. R. Montgomery, Michigan State University—large herd practice; M. M. Hathaway, Davison—large animal practice; R. W. Huff, Detroit—uro-genital techniques and equipment; D. K. Detweiler, University of Pennsylvania—cardio-vascular disease in dogs; R. G. Pearce, Royal Oak—practice building tips; D. J. Anderson, Fort Worth, Texas—equine practice; A. F. Freeman, Kansas City, Mo.—leptospirosis; J. F. Quinn, Lansing—activities in the state veterinarian's office; W. O. Brinker, Michigan State University—bonding of fractures by plastic adhesives; J. Donovan, Detroit—hospital construction; and A. R. Wingerter, Big Rapids—general practice.

Michigan's Veterinarian of the Year

Dr. Milton J. Geiger (CVC '12) of Croswell was selected for this year's State Association's Veterinarian of the Year Award. He was presented with a plaque signifying the honor at the organization's annual banquet on June 25.

Dr. Geiger practiced a year in Sebewaing before moving to Croswell, where he has practiced for 46 years. He has served on the City Council there for nine years; four of these years as mayor. In addition, he was on the Croswell-Lexington District School Board. Dr. Geiger is a member of the AVMA and a life

Dr. Milton J. Geiger

member of the Michigan V.M.A. Currently, he is engaged in practice with his son, Harold N. (MSC '50).

New Roster

Newly elected officers of the Association are: Drs. William Mackie, Lapeer, president; Alvin Wingerter, Big Rapids, president-elect; John Donovan, Detroit, first vice-president; Max Decker, Lansing, second vice-president; Tom Millerick, Saginaw, third vice-president; Paul Howard, Grand Rapids, treasurer; and Robert F. Willson, Detroit, executive secretary.

s/ROBERT F. WILLSON, *Executive Secretary.*

New Jersey

State Association.—The Veterinary Medical Association of New Jersey met in conjunction with the American Radiology Society at the Nassau Tavern in Princeton, on April 7. Its seventy-fifth diamond jubilee meeting was held April 8-9, at the Princeton Inn.

Included on the April 7 program: Drs. Julius J. Fishler, Elkhart, Ind.—letters to the secretary and case reports; Lester R. Barto, Basking Ridge—radiographs without hands; Gerry B. Schnelle, Boston, Mass.—the intervertebral disk syndrome; and William H. Rhodes, Philadelphia, Pa.—presided over the evening session, including a film reading session.

Among the speakers on the state association's program were: Drs. John Whitehead, N.Y.C., N.Y.—urethrostomy employing a polyethylene tube implant; Richard Shope, N.Y.C., N.Y.—a recent trip to the U.S.S.R.; Charles Gandal, N.Y.C., N.Y.—treating exotic animals; R. E. Rebrassier, Columbus, Ohio—newer drugs useful against parasites; Robert Leighton, N.Y.C., N.Y.—surgical repair of the canine hip; David Tudor, New Brunswick—poultry practice; George Blackledge, Tuskegee Institute, Ala.—canine artificial insemination; Abraham Barton, N.Y.C., N.Y.—veterinary history; and David Coffin, N.Y.C.—clinical laboratory tests.

Two panel discussions were included: metabolic diseases of large animals; and diseases of animals transmissible to man.

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Women's Auxiliary.—The Women's Auxiliary to the Veterinary Medical Association of New Jersey held its two-day annual meeting, April 8-9, 1959, at Princeton.

Mrs. Lowell Thomas, Jr., a guest speaker, presented a travelogue of her 13-month trip with her husband through Africa, Arabia, Persia, and Pakistan. Mrs. R. E. Rebrassier and Mrs. S. F. Scheidy were the guests of honor.

Officers elected are: Mrs. Lester R. Barto, Basking Ridge, president; Mrs. C. J. Chehayl, Westfield, first vice-president; Mrs. Bernard M. Weiner, West Orange, second vice-president; Mrs. Arthur F. North, Jr., Somerville, secretary; and Mrs. Lloyd J. Sanders, Dover, treasurer.

In addition, the Auxiliary voted to contribute $100 to the Student Loan Fund and $25 to the Research Fund.

s/JANE E. NORTH, *Secretary.*

Ohio

Joint Meeting, Northwestern Ohio Association and Region 3–A.A.H.A.—The Fifty-Second Annual meeting of the Northwestern Ohio V.M.A. and Region 3 of the American Animal Hospital Association was held in joint session, March 24-25, 1959, at the Commodore Perry Hotel in Toledo, Ohio.

The program and participants included: Drs. Robert V. Johnston, Indianapolis, Ind.—immunology of virus diseases of small animals; Milton L. Willen, Canton, and Lawrence E. Green, Akron—gadgets; William J. Westcott, Detroit, Mich.—corporate practice; Julius J. Fishler, Elkhart, Ind.—can you work without hands?; Stewart K. Harvey, Monson, Mass.—pony and saddle horse practice; Lendall K. Firth, Canton—training of sub-professional employees; William C. Hackett, London—contract services in large animal practice; Frank R. Booth, Elkhart, Ind.—A.A.H.A. inspection; Raymond W. Worley, South Bend, Ind.—utilization of hospital staff; J. G. Snavely, Toledo—congenital subluxation; Jeness W. Eastman, Rochester, Mich.—canine castration—large breeds; Stephen R. Kelly, Detroit, Mich.—client confidence in

the examination room; Robert Hamlin, Ohio State University—clinical diagnosis of congenital heart diseases; and Stanley J. Bower, Indianapolis, Ind.—swine diseases.

• • •

New Member of Mahoning County V.M.A.—Dr. Helena Constantini (UP '56) has recently opened a small animal hospital at 491 Crandall Ave., in Youngstown.

Dr. Constantini is married to Dr. Joseph Constantini (M.D.) who is on the staff of St. Elizabeth's Hospital there.

s/SAM SEGALL, *Correspondent.*

Oklahoma

Conference for Veterinarians.—The Oklahoma conference for veterinarians was conducted by the College of Veterinary Medicine at Oklahoma State University in Stillwater, April 13-14, 1959.

Among those included on the program were: Drs. L. R. Philips, Lakewood, Colo.—laboratory screening procedures; S. F. Scheidy, Philadelphia, Pa.—new therapeutic agents; N. W. Eyl, Montrose, Colo.—sheep practice; E. J. Turman, Oklahoma State University—dwarfism in beef cattle; N. B. Tennille, Oklahoma State University—radiation hazards; W. H. Krull, Oklahoma State University—small animal parasites; M. N. Riemenschneider, Oklahoma City—problems in regulatory veterinary medicine; R. J. Panciera, Oklahoma State University—postmortem diagnostic problems; and E. D. Besch, Oklahoma State University—diagnosis and control of parasitism in domestic animals.

Participants in the conference's two panels were:

> Carcinoma of the bovine eye—Drs. Doyle Chambers, J. H. Venable, A. W. Monlux, J. B. Corcoran, and Lester Johnson. All are connected with Oklahoma State University.
>
> Surgical treatment of otitis externa—W. L. Good, Ponca City; J. R. Good, Ponca City; C. E. Hofmann, Tulsa; R. R. Parker, Oklahoma City; and W. C. Schilb, Oklahoma City.

Another highlight of the two-day program was the closed-circuit television demonstration held on the second day of the conference.

s/JOHN H. VENABLE,
Chairman, Steering Committee.

Texas

Annual Conference at A.&M. College of Texas.—The Twelfth annual Conference for veterinarians, sponsored by the School of Veterinary Medicine at A.&M. College of Texas, College Station, was held June 3-5, 1959, at the Memorial Student Center.

Appearing on the Conference's program were: Drs. Lester Johnson, Oklahoma State University—clinical problems with Shetland Ponies and routine clinical procedures for large animals; Wade O. Brinker, Michigan State University—surgery of the stifle joint and fracture repair in small animals; W. C. Banks, A. & M. College of Texas—equine fibular anomalies; F. D. Gentry, Springfield, Mo.—hospital management; Charles N. Barron, Armed Forces Institute of Pathology, Washington, D.C.—clinical pathology; John Wilbur, Jr., Fort Worth—federal regulatory medicine; A. B. Rich, Austin, Texas—veterinary public health; Wade O. Brinker and R. J. Beamer, College Station—coxo-femoral luxation repair (Gorman approach); and William M. Romane, A. & M. College of Texas—"firing" of horses.

The College's small animal clinic staff presented a discussion on diaphragmatic hernia repair in the dog and the large animal clinic staff reported on electro-ejaculation of the bull and semen evaluation. A panel on poultry diseases included Dr. L. M. Reedy of Dallas and three veterinarians from the A. & M. College of Texas: Drs. A. I. Flowers; L. C. Grumbles; and R. W. Moore.

Virginia

Southwest Association.—The Southwest Virginia V.M.A. met in April, May, and June to consider a survey of fees. A committee composed of Drs. H. K. Cooper, Roanoke; N. J. Biscotte, Fincastle; G. E. Lawrence, Rocky Mount; L. N. Springer, Dublin; and W. R. Van Dresser, Blacksburg; directed the survey and discussions.

The Association will continue these discussions this fall in consideration of a minimum fee schedule.

s/D. F. WATSON, *Secretary.*

• • •

Department of Veterinary Science Established at Virginia Polytechnic Institute.—On July 1, 1959, what was formerly known as the Animal Pathology Section of the Biology Department at Virginia Polytechnic Institute, Virginia Agricultural Experiment Station, in Blacksburg, became known as the Department of Veterinary Science under the School of Agriculture.

s/D. F. WATSON, *Head, Veterinary Science, Virginia Polytechnic Institute.*

STATE BOARD EXAMINATIONS

TEXAS—Jan. 11-13, 1960, Austin. The completed application must be received in the Board office not later than 30 days before the examination date. Requests for information and applications should be sent to: Mr. T. D. Weaver, Executive Secretary, Texas State Board of Veterinary Medical Examiners, 207 Capital National Bank Building, Austin 16, Texas.

VETERINARY MILITARY SERVICE

Fort Sam Houston, Texas

When the decision to continue the Veterinary Corps as part of the Army Medical Service was made last year, additional spaces for officers were also authorized.

On July 24, forty veterinarians, the largest number ever to enter the Army in peacetime, completed a military orientation course at the Army Medical Service School, at Fort Sam Houston.

Representing 17 schools and 20 states, these newly commissioned officers comprise approximately 10 per cent of the Army Veterinary Corps and bring the Corps to its full capacity. Officers with their various assignments are:

From the University of Pennsylvania

First Lieutenants David E. Davidson, Jr.—Army Medical Research Laboratory, Fort Knox, Ky.; John R. Seminatore—Omaha, Neb.; James M. Flickinger—New York City, N.Y.; Thomas J. Bucci—Fifth Army Area Medical Laboratory, St. Louis, Mo.; William C. Marlatt—U.S. Army Garrison, Fort Gordon, Ga.; and John C. W. Bauersfeld—U.S. Naval Personnel Center, Omaha, Neb.

From the A. & M. College of Texas

First Lieutenants Ross R. Williamson, Jr.—New Cumberland, Pa.; Kenneth E. Kinnamon—Walter Reed Army Institute of Research, Washington, D.C.; and Preston Prause—Bakersfield, Calif.

From the University of Illinois

First Lieutenants Beryl D. Mell—Army Chemical Warfare Laboratory, Army Chemical Center, Md.; Marvin T. Case—Memphis General Depot, Memphis, Tenn.; Stanley E. Blinkhorn—Jacksonville, Fla.; and Paul K. Hildebrandt—U.S. Army Medical Unit, Fort Detrick, Md.

From Cornell University

First Lieutenants Frederick A. Murphy—Fourth Army Area Medical Laboratory, Fort Sam Houston; and Albert G. Wooding—Columbus General Depot, Columbus, Ohio.

From Ohio State University

First Lieutenants Robert G. Geil—Army Medical Research and Nutrition Laboratory at Fitzsimons Army Hospital, Denver, Colo.; Carl E. Kerekes—New York, N.Y.; and Dale E. Wright—Army Chemical Warfare Laboratory—Army Chemical Center, Md.

From Kansas State College

First Lieutenants Delvin D. Duntz—Pittsburgh, Pa.; Dale R. Hodgson—Veterinary Food Detachment, Maywood, Calif.; Edward S. John—Fort Snelling, Minn.; Richard W. Voelker, Jr.—New York City, N.Y.; and Donald E. Wittum—Fort Snelling, Minn.

From Iowa State College

First Lieutenants Richard W. Jones—Presidio of San Francisco, Calif.; Norman F. Cheville—Army Biological Warfare Laboratory, Fort Detrick, Md.; Raymond T. Abel, Fort Lewis, Wash.; John O. McNellis—Fort Benning, Ga.; Edwin W. Lindquist, Jr.—Veterinary Food Inspection Division, Fort Lewis, Wash.; Robert W. Klind—Veterinary Food Inspection Division, Presidio of San Francisco, Calif.; Robert A. Whitney, Jr.—Boston, Mass.; James R. Wells—Presidio of San Francisco, Calif.; and John H. Barton—Army Biological Warfare Laboratory, Fort Detrick, Md.

Forty newly-commissioned members of the Army Veterinary Corps who attended a military orientation course last July are shown above en masse at the Brooke Memorial Center. This is the largest group to enter the Army in peacetime.

Seated in the center of the front row are Colonel D. S. Stevenson (COR '34) and Lt. Col. M. C. Lockwood (MSC '41), director and assistant director of the Department of Veterinary Science at the Army Medical Service School, in Fort Sam Houston, Texas.

From Alabama Polytechnic Institute

First Lieutenant William D. Roberson—Fort McArthur, Calif.

From Missouri University

First Lieutenant John H. Boucher—Army Medical Unit, Fort Detrick, Md.

From Michigan State University

First Lieutenant Louis J. Blesch—Fort Baker, Calif.

From the University of Minnesota

First Lieutenant Thomas W. Wanous—New York City, N.Y.

DEATHS

Star indicates member of AVMA

Max B. Atwood (GA '52), 44, Marianna, Fla., died June 23, 1959. Dr. Atwood has been with the Florida Livestock Board Poultry Disease Laboratory in Cottondale for several years.

★**John Bertram Cheshire** (KSC '31), 58, St. Joseph, Mo., died June 22, 1959, following a heart attack.

Dr. Cheshire was born in Northboro, Iowa. He had practiced in Maryville, Mo., for over 20 years, prior to selling his practice and moving to St. Joseph, a few years ago.

★**Raymond D. Coneley** (UP '23), Lima, Pa., died June 15, 1959.

During his professional career, Dr. Coneley had practiced in Delaware, Pennsylvania, New York, Maryland, and New Jersey. He was a specialist in horse surgery. At one time, he had been veterinarian for the Delaware Park and Havre de Grace racetracks; later for a private racetrack, Fairhill, near Elkton, Md.

He was president and founder of Man-O'War Remedy Company in Lima.

★**John L. George** (KSC '32), 53, Chester, Neb., a former Nebraska state veterinarian, died June 30, 1959, in a hospital in Concordia, Kan. He had been in ill health for some time.

Born in Norton, Kan., Dr. George began his practice in Chester immediately after his graduation from Kansas State and was still practicing there at the time of his death. He had interrupted his practice there for only 18 months in 1934-1935, to work with the U. S. D. A. in Oklahoma and Indiana.

He served as a member of the Nebraska V.M.A. executive board for two years and as president in 1950. He was also appointed to the State Examining Board in 1950, serving two terms.

In 1953, Dr. George was selected as State Veterinarian for Nebraska and served until ill health necessitated his resignation in 1958. He was a member of both the state and national brucellosis committees and also a member of the national leptospirosis committee.

Active in civic affairs, Dr. George was mayor of Chester for four years, and a member of the school board there for several years. For the past ten years, Dr. George was also a member of the board of directors of the State Bank of Chester.

James F. Harr, Sr. (WSC '30), 52, Charles City, Iowa, died in Altoona, Pa., June 29, 1959, following a heart attack. He had been on a business trip at the time of his death.

Dr. Harr was manager of the industry service department of Dr. Salsbury Laboratories and had been manager of biological production.

Among Dr. Harr's survivors is one son who is also a veterinarian, Dr. James R. (WSC '57) of Silver Spring, Md.

★**Christian W. Lassen** (MCK '06), 75, Cornelius, Ore., a life member of the AVMA since 1957, died June 16, 1959.

Born in Winnetka, Ill., Dr. Lassen moved to Pendleton, Ore., four years after his graduation from McKillip Veterinary College, practicing there from 1910 to 1945. He had been a resident of Cornelius for ten years.

★**George J. Lengerich** (CIN '17), 67, Mokena, Ill., died June 25, 1959, following a lingering illness.

After graduation, Dr. Lengerich began his practice in Botkins, Ohio. He then was commissioned a Second Lieutenant, and served in World War I for one year, after which time he returned to Botkins.

He accepted a position with the former Bureau of Animal Industry in 1921. He worked in South Dakota, Iowa, and Chicago, Ill., until his retirement in June, 1952. He had resided in Mokena for seven years.

Clyde W. Moore (MCK '02), 82, Farmland, Ind., died July 1, 1959, after a year's illness.

After graduation from Purdue University in 1901, Dr. Moore attended McKillip Veterinary College in Chicago, Ill. At one time he had served for eight years as trustee for the Stoney Creek Township in Randolph County.

Richard A. Reeve (SF '15), 75, Seattle, Wash., died June 17, 1959, from cancer.

Born in Wisconsin, Dr. Reeve had moved to Whatcom County, Wash., in 1909. He established his practice there in 1915 and continued to serve the Everson community until a year ago when ill health necessitated his retirement, and he moved to Seattle.

George E. Repp (CVC '02), 86, Lancaster, Pa., died June 22, 1959.

Dr. Repp was born in Waynesboro, Pa. He had been an inspector for the former B.A.I. for 34 years prior to his retirement.

A. R. Trickel (GR '02), 84, Hazel Green, Wis., died June 21, 1959, at the home of his stepdaughter, Mrs. Clifford Storlie, near Darlington, Wis.

Dr. Trickel had practiced in both the Darlington and Hazel Green areas.

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by Irving H. Leopold, Anna C. Nichols and Adolph W. Vogel. *Arch. Ophthalmology*, 44: 22 (July) 1950.

INFECTIOUS KERATOCONJUNCTIVITIS OF CATTLE
by S. Lester Jackson. *Vet. Med.*, 49: 260 (June) 1954.

THE PRACTICAL RESULTS OF SENSITIVITY TESTS IN SMALL ANIMAL PRACTICE
by Margaret Schlichting. *Vet. Med.*, 51: 280 (June) 1956.

TOPICAL USE OF CHLORAMPHENICOL IN EXTERNAL OCULAR INFECTIONS
by Winston Roberts. *Am. J. Ophthalmology*, 34: 1081 (Aug.) 1951.

THE CLINICAL USE OF CHLOROMYCETIN IN CANINE OCULAR INFECTIONS
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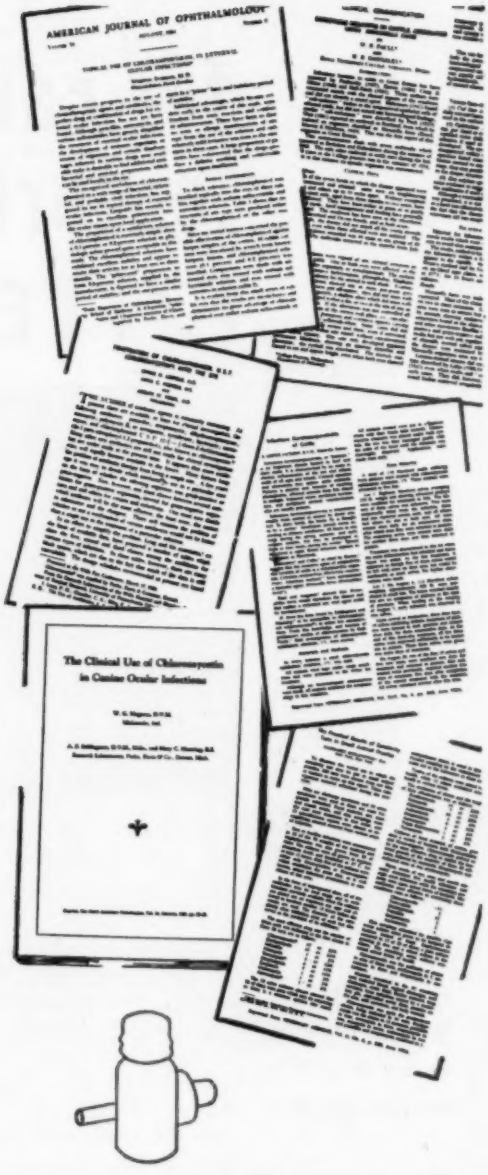
by W. B. Faull and M. B. Hawksley. *Vet. Rec.*, 66: 311 (May 29) 1954.



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1. Osborne, J. C. *in* New Horizons in Chemotherapy. Proceedings of First Regional Conference on the Nitrofurans in Veterinary Medicine. In press.
2. Bull, W. S.: N. Amer. Vet. 38: 3 (Jan.) 1957.

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Fig. 1—Radiograph, ventrodorsal view, of the pelvis and hindlegs of a male Wire-Haired Fox Terrier, 5 months old.

History.—A male, Wire-Haired Fox Terrier, 5 months old, stood with his back arched and his hindlegs partially flexed and bowed out at the stifles. He hopped, in rabbit fashion, when he attempted to move. The condition was first noticed at weaning time but became more evident as the dog grew older. Radiographs of the hindlegs and pelvis were taken (fig. 1).

Here Is the Diagnosis

(Continued from preceding page)

Diagnosis.—Bilateral patellar ectopia in a Wire-Haired Fox Terrier.

Comment.—The radiograph shows the stifle joints flexed in malposition with the patellas medial to the stifle joints (fig. 2). When the radiographs were taken, it was impossible to extend the hindlegs in sagittal planes.

This anomaly, not uncommon in small breeds, often exists at birth. The pup is usually between 2 and 5 months old when the owner realizes that the skeletal development is abnormal.

It appears to result from malformation of the two long bones which meet at the stifle joint, and from malposition of the patella and of the quadriceps muscle and its tendon. The shaft of the femur is bowed slightly outward and the trochlear groove for the patella is shallow or, in some cases, almost absent. No study of the angle of torsion between the neck and head of the femur and the distal condyles has been reported but it is probably diminished. The anteroposterior axis of the proximal articular surface of the tibia is less than normal; the mediolateral axis is greater than normal. The tibial tuberosity is medial to its normal position. When the dog is suspended vertically, the hindlegs cross. The anomaly and an operation for its correction have been described.[1]

Fig. 2—Radiograph, ventrodorsal view, of the pelvis and hindlegs of a male Wire-Haired Fox Terrier, 5 months old. Notice the position of the hindlegs; (A) the patellas; (B) malformation of the distal ends of the femurs; and (C) proximal ends of the tibia.

[1]Vierheller, R. C.: Surgical Correction of Patellar Ectopia in the Dog. J.A.V.M.A., *134*, (May 15, 1959): 429-433.

(*Continued on adv. p.* 34)

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1. Jones, S. V.; Belloff, G. B., and Roberts, H. D. B.: Vet. Med. 51:413 (Sept.) 1956.

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DIAGNOSIS—Continued

When asked for advice regarding the correction of such a crippling malformation, how practical should veterinarians be? Would it not be best to advise euthanasia rather than to propose surgery that might lead to a "wheelchair existence" for the pet, unfair need for care by the owner, and possible propagation of more defective pups? Failure of dog breeders to recognize and eliminate disabling congenital malformations and certain undesirable characteristics has blighted the demand for some breeds. Popularity diminished for the Wire-Haired Fox Terriers and Scottish Terriers because of a tendency toward dermatitis; for Cocker Spaniels, because of their disposition; and now for German Shepherd Dogs because of hip dysplasia.

Many other breeds have undesirable faults but few breeders admit it. Veterinarians are often considered cruel when they suggest euthanasia for a malformed individual. It seems almost a losing battle to try to teach respect for genetics. For example, if you happen to like Dachshunds, it is hard to stand by and see this breed become fishlike. Some Dachshunds have such short limbs and deep chests that they appear to have flippers for legs. Genetically, most of these defects are due to recessive factors and, therefore, are not easily "bred out," but the percentage can be lowered if undesirable specimens are denied the chance to reproduce.

This report was submitted by the Riser Animal Hospital, Skokie, Ill.

Our readers are invited to submit histories, radiographs, and diagnoses of interesting cases which are suitable for publication.

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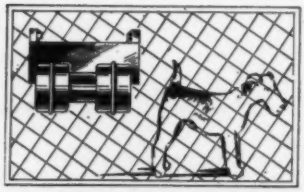

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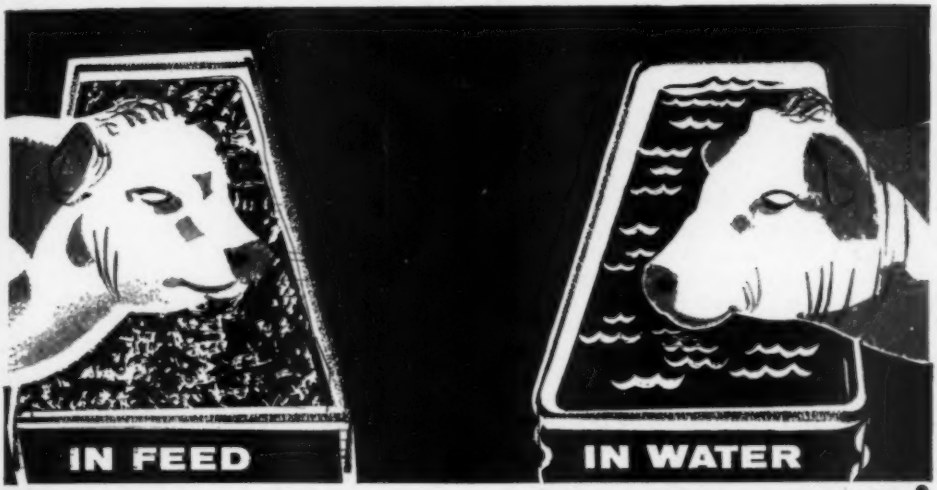

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President Rebrassier's Address to the House of Delegates

The following is a summary of President Rebrassier's address to the House of Delegates at the 96th Annual Meeting of the AVMA in Kansas City, Aug. 23-27, 1959.

Since the adoption of the new Constitution and Bylaws at the 95th Annual Convention of the AVMA, in Philadelphia, a reorganization has taken place in the functions of the Association. In the central office, functioning under the direction of the executive secretary, levels of administration have been developed under the director of public relations, director of professional relations, business manager, editor-in-chief, and treasurer, all on the same general level. Dr. James R. Hay was added to the staff to serve in the capacity of director of professional relations, while the other areas are directed by staff members already with the organization.

Our new constitution and Bylaws provide many changes in organization and operation—perhaps the most important was the creation of six councils, reference committees in the House of Delegates, and two additional Executive Board Districts. During the past year, members of the six councils have given unstintedly of their time and effort to study our problems and provide recommendations for their solution. Their major accomplishments are (briefly):

Council on Biological and Therapeutic Agents

Advertising claims of products to be introduced to the profession are being studied and a subcommittee on Standards and Toxicology is collaborating on the forthcoming revision of the "National Formulary."

The Council will represent the AVMA at the U.S. Pharmacological Convention, and is planning a series of articles or guest editorials to acquaint the profession on problems of current interest to the practitioner.

Judicial Council

This is a council where matters can be referred after they have been acted upon by the constituent state associations. It is undertaking a program of compiling and indexing representative opinions and interpretations of the "Principles of Veterinary Ethics," which entails revision of the principles as are presently written. Appendix "A" of their annual report consists of a revision of the "Principles of Veterinary Medical Ethics" for consideration by the House of Delegates.

Dr. R. E. Rebrassier

Studies are being made of "Life Membership," applications for membership, directory listings, some proposed amendments to the Constitution and Bylaws, and the interest of AVMA members in the programs of organized veterinary medicine.

Council on Public Health and Regulatory Veterinary Medicine

This Council has recommended Dr. Robert Kissling as a candidate for one of the "Ten Men of the Year" of the U.S. Junior Chamber of Commerce which, if accomplished, will enhance our public recognition. It has reviewed recommendations on policy relative to food hygiene, including the proper utilization of lay inspectors in the poultry and meat inspection programs. It has instigated procedures to evaluate the facts in the field of antibiotics and chemical residues in food; has given consideration to the proper interest relative to the humane slaughter of animals; and is developing plans for a recommended code of procedures as a guide in meat and poultry inspection programs.

Future planning includes efforts to have one or more technical papers by AVMA representatives included in the program of the National Health Conferences, and case findings of bovine tuberculosis and trichinosis as related to human.

Council on Research

Some objectives of this Council are the revision of the brochure for the Council on Research; developing closer liaison with animal husbandry

(Continued on adv. p. 38)

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faculties so that a better understanding can be had of problems common to animal husbandry and veterinary medicine in the area of research; and it has assisted in introducing veterinary medicine in a National Science Fair. During the year, this council has renewed three fellowship awards, granted eight new fellowships, and six fellowships have been completed. The council has instigated study in the following areas:

a) Trends in agriculture and medical research.

b) Ways and means to stimulate interest in research.

c) Evaluating fundamental research in veterinary medicine and its relationship to human medicine.

Council on Veterinary Service

This Council has been studying veterinarian ownership of a cooperative biological and pharmaceutical company; the new agreement between the Agricultural Research Service and the practitioner working on a "fee basis" in the brucellosis and tuberculosis eradication programs; the relationship between the American Humane Association and the AVMA; the problem between the St. Louis Humane Association and the practitioners in that area; representation from the AVMA to allied organizations; and feed manufacturer—veterinarian relationship.

Council on Education

The primary function of this Council is to maintain high standards of veterinary education in the United States and Canada. Considerable progress is being made in solving the problem of recognition of graduates from foreign schools and appropriate assistance has been given to licensing boards, veterinary educational and research institutions and other agencies employing foreign-trained veterinarians.

The council is devoting time and effort in the area of graduate education and is conducting a survey of Specialty Boards in Veterinary Medicine.

Staff Activities

In addition to the studies, reviews, and accomplishments made during the past year by the six Councils, the officers and staff personnel have accomplished many items necessary to function properly and to expand activities into new areas.

Public Relations

A Public relations consultant agency has been surveying the needs of our profession in this area and has presented a detailed report to the Executive Board.

A special effort is being made to provide material to high schools indicating the opportunities and services in veterinary medicine. It is hoped that this information will create an interest in veterinary medicine among the higher ranking high school students.

This year for the first time, the AVMA participated in the National Science Fair which affords an opportunity to receive national publicity related to the Fair. It is planned to continue this activity and make this award an annual event.

The booklet "Veterinary Medicine as a Career" was developed in color and has been distributed to high schools, veterinary organizations and veterinarians.

"The Veterinarian," a 25-minute, color motion picture with sound has been produced on 16-mm. film. This is a valuable addition to our film library and is a fine portrayal of the services of the veterinarian.

In addition, other items, such as the PR Roundup, radio interview scripts, clipping bureau, magazine articles, speaker's kits, and exhibits have been continued.

Professional Relations

This area has been enhanced by the addition of a director of professional relations, which has made possible increased relations with student chapters, Executive Board districts, and allied organizations.

An effort is being made to have AVMA representation before each Student Chapter at least once each academic year. The past year two thirds of the chapters have been visited.

A total of 275 film showings of 52 different films relating to veterinary medicine has been used by constituent, local, and other associations.

A comprehensive survey is being conducted to determine future needs of the AVMA and our profession. This survey, when completed, should indicate developments for the future and make possible adequate and sound planning.

The Future of the Profession

It is difficult to foretell future problems. We can only plan for the future on the basis of present knowledge. In indicating some of these problems, one cannot always suggest absolute solutions, but we must strive for their solution by the application of strong leadership and sound philosophy.

Changing Animal Agriculture.—As past-president Armistead stated last year "We cannot afford to ignore the developing vertical integration of agriculture." This problem has been the theme of many of our professional discussions. On the basis of careful study, it is now logical to state that we are approaching this problem in a sound professional manner, without misgivings, and the profession will assume its merited role in the new order.

(Continued on adv. p. 40)

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DR. REBRASSIER'S ADDRESS—Cont'd

Research Trust Fund.—Action has been taken to develop the Research Fund, and the Executive Board is presenting to the House of Delegates measures to initiate a sound program for the future.

Our New Role in Society.—When we think of veterinary medical services to society today, we must think of a nation that spans a continent and has more than doubled its population in 50 years; a nation that maintains armed forces at home and abroad ten times the size of its military power 25 years ago; and a nation in which the agricultural pattern is changing so rapidly that it is difficult to adjust our services to meet the need.

While the AVMA has assumed the leadership in this new role, the local and constituent associations must contribute to the general program. The AVMA is now in a position and desires to aid the local and constituent groups, but needs to know the problems at the "grass roots," before studies, actions and possible solutions can be made.

Graduate Training Programs.—Additional college training must be offered for those who desire teaching and research and those who engage in public health. Military and agricultural research service personnel should have adequate "on-the-job" training; and those who wish to engage in private practice should serve a period of experience with well-established practitioners.

It would seem desirable that our Council on Education should study this problem, and in cooperation with these agencies, develop adequate and uniform methods to meet these needs.

AVMA Headquarters.—The time has come to study the future needs of our central office in terms of ten to 25 years. We should have a general conception as to the amount of office space that will be needed as our organization expands. We should study the location of office so as to offer the best possible facilities, and also the possibility of acquiring our own building under an amortization plan over the years. A committee has been appointed to study this problem during the next five years and it is hoped that it will present some definite recommendations for consideration.

In conclusion, I wish to express my appreciation for the honor and privilege of serving as your president. It has been a challenge that I hope has been met. I thank all those who have supported me with their time and efforts for the progress of veterinary medicine. Special thanks is extended to the Councils, Executive Board, House of Delegates, and the headquarters staff. It is these groups who have developed the pattern for the officers to execute. I close with my best wishes for the continued progress of veterinary medicine.

STUDENT CHAPTER ACTIVITIES

Minnesota Chapter

The University of Minnesota Student Chapter of the AVMA completed in May one of its more successful years in regards to quality of programs. Some of the outstanding speakers contributing to our success were: at the November meeting—Dr. W. E. Peterson, Dairy Husbandry Department, University of Minnesota, "The Local Production of Antibodies in the Bovine Udder"; February meeting—Dr. S. F. Scheidy, president of the AVMA, spoke on the operations of the AVMA and services available to student chapters; March meeting—Dr. T. W. M. Cameron, director of the Institute of Parasitology, McGill University (Montreal), "Animal Parasites and Human Welfare"; April meeting—Mr. Lewis Harris, Norden Laboratories, "The Veterinarian on the Witness Stand"; May meeting—Dr. A. M. Lawn of the Royal Veterinary College (London), spoke on the educational requirements of an English veterinary student and narrated a film on "The Effects of Lobectomy in Goats on Prehension, Mastication, and Rumenation."

At the May meeting, election results for the 1959-60 officers were announced: LaRue Johnson, president; Richard Schultz, president-elect; David Duffin, vice-president; Barbara Persson, secretary; Henry Pattison, treasurer; and Robert Lohrenz, sergeant-at-arms.

The advisors are Drs. Robert K. Lindorfer and Henry J. Griffiths; the class representatives: Ivan Berg (senior), Glen Wolff (junior), Forrest Thannum (sophomore).

s/LaRue Johnson, *Secretary.*

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An 18-Year-Old Hen

A woman in Wisconsin says she has a hen 18 years old that is still laying fairly well. The hen is a cross between a Bantam and a Buff Orpington. —*Prairie Farmer (July 18, 1959): 6.*

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Public Relations

Convention Publicity

Besides scientific data and camaraderie, the AVMA annual meetings do a great deal more for the profession. Among other things, it provides an opportunity for local veterinarians to work together in making detailed arrangements necessary for a convention of this size. In many convention sites of past meetings, the united effort of a project of this magnitude has held the local association together for many subsequent worthwhile activities of benefit to the veterinary profession and the community.

The Kansas City meeting was no exception, and carried the added benefit of involving the associations of two states, as well as the local veterinarians.

In addition, many members of the press attended, and the two Kansas City newspapers, the *Kansas City Star* and the *Kansas City Times*, gave excellent coverage by the city staff as well as the medical and farm departments. This newspaper also publishes the *Weekly Star Farmer*, which circulates in rural areas of the two states.

Tape recordings were also made especially for Milton Bliss and Everett Mitchell of NBC's National Farm and Home Hour, Mr. Claude Mahoney of Mutual Broadcasting System's farm report, and Mr. John Aiken of the Ontario-Quebec division of the Canadian Broadcasting Corporation.

Before the meeting, news releases were sent to the hometown newspapers of every speaker on the program, and during the meeting, releases were turned in by members of the Women's Auxiliary House of Delegates and officers.

The Woman's Auxiliary was founded at the AVMA meeting in Kansas City 42 years ago. Newspapers and Miss Martha Spaulding, woman's program director, WDAF, recognized that fact in print and on the air. On her WDAF Radio Sketchbook, Miss Spaulding interviewed Dr. Patricia Cope on August 19, and Mrs. E. A. Woelffer on August 21.

Releases were prepared from advance material, and from material gathered at the meeting which were mailed to farm, pet, science, and general magazines not represented at the meeting. These will appear during the year in the pages of these publications.

A total of 23 separate stories appeared in the Kansas City newspapers, with ten going out on the wire service to the nation. Additional stories will appear in the *Weekly Star Farmer*, and two features by Miss Mary Rutter, Kansas City's Associated Press feature writer.

Closed circuit television intrigued Kansas City TV news crews, and through the cooperation of Dr. Les Fisher, several good motion pictures of live animals and veterinarians appeared on the TV screens of Kansas Citians.

Press Attendance:

Mrs. Patricia Doyle, reporter, *Kansas City Times.*
Mr. Charles Woo, reporter, *Kansas City Star.*
Mr. Conway Carlson, medical editor, *Kansas City Star.*
Mr. Don Evans, *Weekly Star Farmer.*
Mr. Roger Stephenson, editorial writer, *Kansas City Star.*
Mr. Bill Moore, columnist, *Kansas City Star.*
Mr. Joe Green, *Kansas City Call.*
Miss Mary Rutter, Associated Press.

Magazine Representatives:

Mr. Ovid Bay, *Farm Journal.*
Mr. Mike Bay, *Successful Farming.*
Mr. Robert Kennedy, *American Hereford Journal.*
Mr. George Moore, *Capper's Farmer.*
Mr. Clayton Hobbs, *Breeder's Gazette.*
Mr. Jim Bledso, *Jet.*

Veterinary Magazines:

Mr. Glen Costello, *Modern Veterinary Practice.*
Mr. Harry Costello, *Modern Veterinary Practice.*
Dr. Carlos Cooper, *Veterinary Medicine.*
Mr. Ralph Shikes, *Schering Veterinary Dispatch.*
Mr. Lee Galperin, *Schering Veterinary Dispatch.*
Miss Lynn Anderson, *Schering Digest.*
Dr. D. A. Price, JOURNAL of the AVMA.

Radio and Television:

Mr. Jack Kroeck, farm director, WDAF.
Mr. Gary Neilan, farm reporter, WDAF.
Mr. Sam Feeback, WDAF-TV.
Mr. Tom Reid, news, WDAF.
Mr. George Stephens, farm director, KCMO, KCMO-TV.
Mr. Jim Monroe, news, KCMO, KCMO-TV.
Mr. Claude Dorsey, news, KMBC, KMBC-TV.
Mr. Tommy Benton, farm director, KMBC, KRMB.
Mr. Norman Kraeft, farm director, WGN, WGN-TV Chicago.

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Pills, Pills, Pills

Cure-all pills and other dietary supplements are estimated to be the cause of 10 million Americans squandering $500 billion per year ($1 per victim per week).—*Sci. News Letter (Aug. 8, 1959): 94.*

A New Fly Threat to U.S. Cattle

An exotic fly, easily mistaken for the common house fly, was first identified on Long Island in 1953, and has now become a serious pest for cattle as far west as Illinois. The fly, *Musca autumnalis,* is now too widespread to be eradicable.—*Sci. News Letter (Aug. 22, 1959): 120.*

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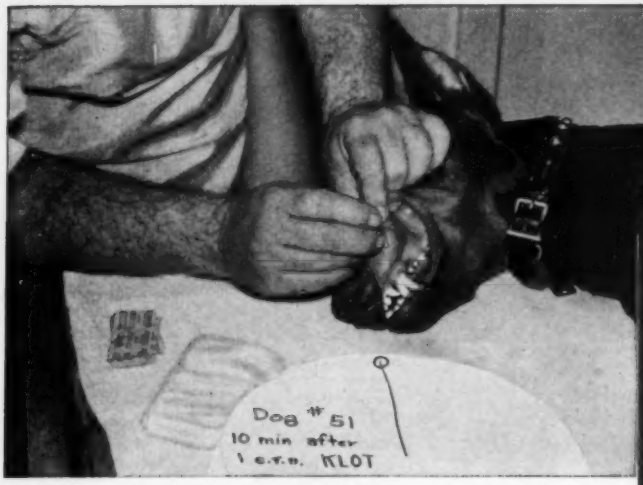

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History of the AVMA

Young's Hotel, Boston, site of many semiannual meetings of the U.S.V.M.A.

1869

The semiannual meeting for 1869 was again held in Young's Hotel in Boston, and the annual meeting in New York. After discovering that the diplomas of membership issued since 1863 were illegal because the Association was not incorporated, it was recommended that the diplomas already issued be recalled, and only a receipt for the initiation fee be issued thereafter. It was resolved to study the matter of petitioning Congress for an act of incorporation of the Association, but in 1872, the committee appointed for this purpose reported: "Upon legal advice it was deemed inadvisable to obtain a charter."

As a matter of fact, the Association was not incorporated until 1916. Merillat and Campbell state: "For reasons not clearly explained in the records, outstanding figures in the administration of the association objected to incorporating it."

In going back over the records immediately prior to 1916, the only reason advanced for not incorporating the Association was that it would thus be possible for individuals to sue the Association. Others, however, pointed out that without incorporation, individual officers of the Association could be sued (and had been) over matters for which they had not been immediately responsible. It was also pointed out that another group could incorporate themselves with the same name, and prevent the AVMA from using its own name.

It had been proposed earlier to publish papers presented by members along with the proceedings of the Association meetings, but in 1869, the Committee on Intelligence and Education reported that they had received no papers worthy of publication.

It was resolved to amend the Constitution to substitute the word "members" for "fellows" of the Association. Resolutions of regret were passed over the loss sustained in the deaths of former presidents R. H. Curtis and C. M. Wood. Dr. Walter Burnham, Lowell, Mass., was elected an honorary member, apparently the first "outsider" in this category. Earlier, John Busteed, M.D., who presided at the organization meeting in 1863, and past-president Curtis had been made honorary members.

Dr. Busteed's relationship to the Association appears to have been a somewhat curious one. In addition to serving as chairman of the organization meeting, he served on the Library Committee for three years, and in 1866 was made an honorary member of the Association, after which he appears to have participated very little in Association affairs.

Elected as officers for the ensuing year were: E. F. Thayer of Massachusetts, president; Isaiah Michener of Pennsylvania, vice-president; James L. Robertson of New York, secretary; and Charles Burden of New York, treasurer. Robertson, elected to membership the previous year, was the first "new blood" to be admitted to the inner circle. He became a longtime stalwart of the Association, and was accorded the presidency in 1879. The old faithfuls elected as censors (executive board) were: R. Wood, J. H. Stickney, A. Liautard, W. Saunders, J. C. Walton, and A. Large.

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CHARLES BURDEN, V.S., was born in London in 1833, and came to America when a young man, where he entered into veterinary practice with E. Nostrand in New York City. In 1866, both he and Nostrand entered the New York College of Veterinary Surgeons, the latter graduating in 1867, and Burden in 1868. It is related that during his second year, Dr. Burden was the only member of the class. Upon graduation he resumed the same practice he had held as a nongraduate, and in 1876, took an additional degree from the American Veterinary College.

A charter member of the United States Veterinary Medical Association, he was truly one of the "old guard," serving as secretary for two years, and treasurer for 16 — the longest tenure in any one office until 1935, when M. Jacob completed his 17th year as treasurer of the Association. At his death in 1901, Burden was one of a small handful of surviving charter members of the Association. As censor in 1887, he had been the only charter member to hold office that year.

COMING MEETINGS

Notices of coming meetings must be received 30 days before date of publication.

Pennsylvania State Veterinary Medical Association. Annual meeting, (Combined with the University of Pennsylvania School of Veterinary Medicine's Seventy-Fifth Anniversary celebration). Bellevue-Stratford Hotel, Philadelphia, Pa., Oct. 1-3, 1959. R. C. Snyder, Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Florida State Veterinary Medical Association. Annual meeting. Hillsboro Hotel, Tampa, Fla., Oct. 4-6, 1959. M. W. Emmel, P.O. Box 340, Gainesville, Fla., executive secretary.

Purdue University. Forty-seventh annual conference for veterinarians. Purdue University, Lafayette, Oct. 7-9, 1959.

Eastern Iowa Veterinary Association, Inc. Forty-sixth annual meeting. Roosevelt Hotel, Cedar Rapids, Oct. 15-16, 1959. C. B. Thayer, Medical College, State University of Iowa, Iowa City, Iowa.

Texas Veterinary Medical Association. Annual meeting. Hotel Windsor, Abilene, Oct. 18-20, 1959. Dr. Paul B. Blunt, 710 Maverick Building, San Antonio 5, Texas, executive secretary.

American Public Health Association. Annual meeting. Atlantic City, N.J., Oct. 19-23, 1959. Ernest S. Tierkel, Communicable Disease Center, 50 Seventh St., N.E., Atlanta 23, Ga., correspondent.

Interstate Veterinary Medical Association. Annual meeting. Sioux City, Iowa, Oct. 22-23, 1959. Dr. Don Rubel, 3209 38th St., Sioux City, secretary.

Iowa State College. Eleventh annual veterinary homecoming luncheon. Iowa State College, veterinary courtyard, Ames, at 11:00 a.m., Oct. 24, 1959. Roger Schladetzky, correspondent.

Animal Care Panel. Annual Convention. Sheraton Park Hotel, Washington, D.C., Oct. 29-31, 1959. William I. Gay, Animal Care Panel, 2101 Constitution Ave., Washington 25, D.C., publicity committee chairman.

Southern and West Virginia Veterinary Medical Associations. Combined meeting. Lord Baltimore Hotel, Baltimore, Md., Nov. 1-4, 1959. A. A. Husman, P. O. Box 91, Raleigh, N. Car., secretary, Southern V.M.A., and H. J. Fallon, 200 5th St., W. Huntington, W. Va., secretary, West Virginia V.M.A.

Missouri, University of. Thirty-fifth annual veterinary conference. University of Missouri, School of Veterinary Medicine, Columbia, Nov. 2-3, 1959. Cecil Elder, chairman.

New England Veterinary Medical Association, the Massachusetts Veterinary Association, and Region I of the American Animal Hospital Association. Combined meeting. Statler Hilton Hotel, Boston, Mass., Nov. 7-11, 1959. Dr. Frederick G. Ruder, Jr., 300 N. Pleasant St., Amherst, Mass., president, New England V.M.A. and Massachusetts V.A.

Midwest Small Animal Association and the American Animal Hospital Association, Regional meeting. Hotel Burlington, Burlington, Iowa, Nov. 11-12, 1959. J. Porter Coble, 2828 S. MacArthur Blvd., Springfield, Ill., secretary-treasurer.

Midwest Feed Manufacturers' Association. Second conference. Kansas City, Mo., Nov. 30-Dec. 1, 1959.

Veterinary-Nutrition Conference. Second annual meeting. President Hotel, Kansas City, Mo., Nov. 30—Dec. 1, 1959. This conference is sponsored jointly by the Iowa, Kansas, Missouri, and Nebraska Veterinary Medical Associations and the Midwest Feed Manufacturers' Association.

United States Livestock Sanitary Association. Sixty-third annual meeting. Sheraton-Palace Hotel, San Francisco, Calif., Dec. 15-18, 1959. R. A. Hendershott, 33 Oak Lane, Trenton, N.J., secretary.

Kansas Veterinary Medical Association. Fifty-sixth annual convention. Hotel Broadview, Wichita, Jan. 10-12, 1960. Melvin W. Osburn, 1525 Humboldt, Manhattan, Kan., secretary.

Intermountain Veterinary Medical Association. Annual meeting. Hotel Utah, Salt Lake City, Jan. 20-22, 1960. For information contact: Dr. Douglas H. McKelvie, 1220 South State St., Salt Lake City, Utah, or Dr. R. A. Bagley, 4600 Creek View Dr., Murray, Utah.

Minnesota State Veterinary Medical Society. Annual meeting. Hotel St. Paul, St. Paul, Minn., Jan. 25-27, 1960. B. S. Pomeroy, University of Minnesota, College of Veterinary Medicine, St. Paul 1, Minn., secretary.

Oklahoma Veterinary Medical Association. Forty-fifth annual meeting. Biltmore Hotel, Oklahoma City, Feb. 1-2, 1960. W. F. Irwin, 3550 South Peoria Ave., Tulsa, Okla., secretary.

Foreign Meetings

International Association of Veterinary Food Hygenists. Second Symposium. Basel, Switzerland, May 15-21, 1960. Dr. A. Clarenburg, 1, Sterrenbos, Utrecht, The Netherlands, president.

Regularly Scheduled Meetings

ALABAMA—Central Alabama Veterinary Medical Association, the first Thursday of each month. James L. Chambers, 4307 Normanbridge Rd., Montgomery, Ala., secretary-treasurer.

Jefferson County Veterinary Medical Association, the second Thursday of each month. Dan P. Griswold, Jr., 714 S. 39th St., Birmingham, secretary.

Mobile-Baldwin Veterinary Medical Association, the third Tuesday of each month. Cecil S. Yarbrough, 4121 U.S. 90 West, Mobile, Ala., secretary.

Northeast Alabama Veterinary Medical Association, the second Tuesday of every other month. Leonard J. Hill, P.O. Box 761, Gadsden, Ala., secretary-treasurer.

ALASKA—Anchorage Group of the Alaska V. M. A. the last Wednesday of each month at Fort Richardson Officers' Club or Thompson's Restaurant 6th and I Streets, Anchorage, Alas. Lt. Colonel E. H. Akins, Surgeon's Office, U.S.A.R.A.L., Fort Richardson, Alas., secretary to the Alaska V. M. A.

ARIZONA—Central Arizona Veterinary Medical Association, the second Tuesday of each month. J. W. Langley, Jr., P.O. Box 5013, Phoenix, Ariz., secretary.

Southern Arizona Veterinary Medical Association, the third Wednesday of each month at 7:30 p.m. Gwyn Chapin, 2215 E. Calle Vista, Tucson, Ariz., secretary.

ARKANSAS—Pulaski County Veterinary Medical Society, the second Tuesday of each month. Harvie R. Ellis, 54 Belmont Drive, Little Rock, Ark., secretary-treasurer.

CALIFORNIA—Alameda-Contra Costa Veterinary Medical Association, the fourth Wednesday of Jan., March, May, June, Aug., Oct., and Nov. John S. Blackard, 420 Appian Way, Richmond, Calif., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of February, April, July, September, and December. Herb Warren, 3004 16th St., San Francisco, Calif., executive secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Paul S. Chaffee, 2333 McKinley Ave., Fresno, Calif., secretary.

Humboldt-Del Norte Counties Veterinary Medical Association, the second Tuesday of January, May, September, and November. Dr. M. Lunstra, P. O. Box 734, Eureka, Calif., secretary-treasurer.

Kern County Veterinary Medical Association, the first Thursday evening of the month. James L. Frederickson, 17 Nile St., Bakersfield, Calif., secretary-treasurer.

Mid-Coast Veterinary Medical Association, the first Thursday of each month. William P. Matulich, P. O. Box 121, San Luis Obispo, Calif., secretary-treasurer.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. V. Todorovic, 47 Mann Ave., Watsonville, Calif., secretary.

Northern California Association of Veterinarians, the second Tuesday of the month. Andrew F. Giambroni, P. O. Box 782, Red Bluff, Calif., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month at the Hotel Covell, in Modesto, Calif. T. J. Carleton, 325 W. Lockeford St., Lodi, Calif., secretary-treasurer.

Orange Belt Veterinary Medical Association, the second Monday of each month. R. Y. Foos, P.O. Box 955, Victorville, Calif., secretary-treasurer.

Orange County Veterinary Medical Association, the third Thursday of each month. H. M. Stanton, 1122 S.E. U.S. Highway 101, Tustin, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of the month. R. M. Grandfield, 416 Stephens Rd., San Mateo, Calif., secretary-treasurer.

Redwood Empire Veterinary Medical Association, the third Thursday of the month. R. R. Rediske, 833 Vallejo Ave., Novato, Calif., secretary-treasurer.

Sacramento Valley Veterinary Medical Association, the second Wednesday of the month. E. C. Story, 4819 "V" St., Sacramento 17, Calif., secretary-treasurer.

San Diego County Veterinary Medical Association, the fourth Tuesday of the month. Robert F. Burns, 7572 North Ave., Lemon Grove, Calif., secretary-treasurer.

San Fernando Valley Chapter SCVMA, the second Tuesday of each month at 7:30 p.m., Hody's Restaurant, North Hollywood, Calif. Barbara G. Shirley, Canoga Park, Calif., secretary-treasurer.

San Fernando Valley Veterinary Medical Association, the second Friday of each month at the Casa Escobar Restaurant in Studio City. John Chudacoff, 7912 Sepulveda Blvd., Van Nuys, Calif., sceretary.

Santa Barbara-Ventura Counties Veterinary Medical Association, every three months, no set date. Gerald M. Clark, 5415 8th St., Carpinteria, Calif., secretary-treasurer.

Santa Clara Valley Veterinary Medical Association, the last Tuesday of the month. Robert L. King, 1269 Grant St., Santa Clara, Calif., secretary-treasurer.

Southern California Veterinary Medical Association, the third Wednesday of the month. Mr. Don Mahan, 1919 Wilshire Blvd., Los Angeles 57, Calif., executive secretary.

COLORADO—Denver Area Veterinary Medical Society, the fourth Tuesday of every month. Gene M. Bierhaus, 2896 S. Federal Blvd., Englewood, Colo., secretary-treasurer.

Northern Colorado Veterinary Medical Society, the first Wednesday of each month, in Fort Collins. Dr. James Voss, Veterinary Hospital, Colorado State University, Fort Collins, Colo., secretary.

DELAWARE—New Castle County Veterinary Medical Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. A. P. Mayer, Jr., R.F.D. 2, Newark, Del., secretary-treasurer.

DISTRICT OF COLUMBIA—District of Columbia Veterinary Medical Association, the second Tuesday evenings of January, March, May, and October. R. B. Gochenour, 10109 Ashwood Dr., Kensington, Md., secretary-treasurer.

FLORIDA—Big Bend Veterinary Medical Association, meets the first Sunday of each month at 5:00 p.m. at the Tallahassee Dining Room, Tallahassee. C. Paul Vickers, P.O. Box 309, Tallahassee, secretary.

Central Florida Veterinary Medical Association, the first Friday of each month at 8:00 p.m., place specified monthly. L. R. Poe, 753 W. Fairbanks Ave., Winter Park, Fla., secretary-treasurer.

Florida West Coast Veterinary Medical Association, the second Wednesday of each month at the Lighthouse Inn, St. Petersburg, Fred Jones, 3606 S. Dale Mabry, Tampa, Fla., secretary.

Hillsborough County Veterinary Medical Society, the second Monday evening of each month. For additional information as to the location of each meeting, contact: J. J. Metz, Jr., 5207 Nebraska Ave., Tampa 3, Fla., secretary.

Jacksonville Veterinary Medical Association, the first Thursday of every month. Dodson's Restaurant, Stephen C. Hite, 5807 105th St., Jacksonville 10, Fla., secretary.

Northwest Florida Veterinary Medical Society, third Wednesday of each month, time and place specified monthly. John Webb, P.O. Box 183, Cantonment, Fla., secretary-treasurer.

Palm Beach Veterinary Society, the last Thursday evening of each month. McArthur Dairy Building, Four Points, W. Palm Beach. B. W. Bigger, 2833 S. 4th St., Fort Pierce, Fla., secretary.

Ridge Veterinary Medical Association, the fourth Thursday of each month in Bartow, Fla. John S. Haromy, Route #1, Box 107-A, Lake Wales, Fla., secretary.

South Florida Veterinary Society, the third Wednesday of each month. Time and place specified monthly. Joe B. O'Quinn, 1690 E. 4th, Hialeah, Fla., secretary.

Suwanee Valley Veterinary Association, the fourth Tuesday of each month, Hotel Thomas, Gainesville. G. L. Burch, P.O. Box 405, Ocala, Fla., secretary-treasurer.

Volusia County Veterinary Medical Association, the fourth Thursday of each month. Robert E. Cope, 127 E. Mason, Daytona Beach, Fla., secretary.

GEORGIA—Atlanta Veterinary Medical Society, the third Thursday of each month at the Elk's Home, 726 Peachtree St., Atlanta. Clare L. Bromley, 634 Northside Dr., N.W., Atlanta, Ga., secretary.

Georgia-Carolina Veterinary Medical Association, the second Monday of each month at 8:00 p.m., at the Town

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North Georgia Veterinary Medical Association, quarterly, no set date, the spring meeting at the Veterinary School, Athens, Ga. S. J. Shirley, Commerce, Ga., secretary.

Southeast Georgia Veterinary Medical Association, quarterly, date and meeting place varies. Hugh F. Arundel, P.O. Box 153, Statesboro, Ga., secretary.

South Georgia Veterinary Medical Association, the second Sunday of each quarter at 3:30 p.m., at the Radium Springs Hotel, Albany, Ga. M. W. Hale, Route 2, Tifton, Ga., secretary.

ILLINOIS—Central Illinois Veterinary Medical Association, June 9, Sept. 9, and Dec. 10, 1959. Paul B. Doby, 4 Owens Lane, Springfield, secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month, Charles H. Armstrong, 1021 Davis St., Evanston, secretary.

INDIANA—Calumet Area Veterinary Medical Association, the first Thursday of each month. Bruce Sharp, Box 166, Hobart, Ind., secretary-treasurer.

Central Indiana Veterinary Medical Association, the second Wednesday of each month. P. T. Parker, 224 N. Mill St., Plainfield, Ind., secretary-treasurer.

Michiana Veterinary Medical Association, the second Thursday of every month except July and December, at the Hotel LaSalle, South Bend, Ind. Stanton Williamson, 217 W. Chippewa St., South Bend, Ind., secretary.

Tenth District Veterinary Medical Association, the third Thursday of each month. J. S. Baker, P.O. Box 52, Pendleton, Ind., secretary.

IOWA—Cedar Valley Veterinary Medical Association, the second Monday of each month, except January, July, August, and October in Black's Tea Room, Waterloo, Iowa. A. J. Cotten, P.O. Box 183, Grundy Center, secretary.

Central Iowa Veterinary Medical Association, the third Monday of each month except June, July, and August at 6:30 p.m., Breeze House, Ankeny, Iowa. S. L. Hendricks, secretary-treasurer.

Coon Valley Veterinary Medical Association, the second Wednesday of each month, September through May, at 7:30 p.m., Cobblestone Inn, Storm Lake, Iowa. Robert McCutcheon, Holstein, secretary.

East Central Iowa Veterinary Medical Society, the Second Thursday of each month at 6:30 p.m., usually in Cedar Rapids, Iowa. T. F. Bartley, P.O. Box 454, Cedar Rapids, secretary.

Fayette County Veterinary Medical Association, the third Thursday of each month at 6:30 p.m. in West Union, Iowa. H. J. Morgan, West Union, secretary.

Lakes Veterinary Association, the first Tuesday of each month, September through May, at 6:30 p.m., at the Gardson Hotel, Estherville, Iowa. Barry Barnes, P.O. Box 162, Milford, secretary.

North Central Iowa Veterinary Medical Association, the third Thursday of April, at the Warden Hotel, Fort Dodge, Iowa. H. Engelbrecht, P. O. Box 797, Fort Dodge, secretary.

Northeast Iowa-Southern Minnesota Veterinary Association, the first Tuesday of February, May, August, and November at the Wisneslick Hotel, Decorah, Iowa, 6:30 p.m. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Northwest Iowa Veterinary Medical Association, the second Tuesday of February, May, September, and December, at the Community Bldg., Sheldon. W. Ver Meer Hull, secretary.

Southeastern Iowa Veterinary Association, the first Tuesday of each month at Mt. Pleasant, Iowa. Warren Kilpatrick, Mediapolis, secretary.

Southwestern Iowa Veterinary Medical Association, the first Tuesday of April and October, Hotel Chieftain, Council Bluffs, Iowa. J. P. Stream, 202 S. Stone St., Creston, secretary.

Upper Iowa Veterinary Medical Association, the third Tuesday of each month at 7:00 p.m., at All Vets Center, Clear Lake, Iowa. W. A. Danker, Dows, Iowa, secretary.

KENTUCKY—Central Kentucky Veterinary Medical Association, the first Wednesday of each month. R. H. Folsom, P.O. Box 323, Danville, Ky., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday of each month in Louisville or within a radius of 50 miles, except January, May, and July. G. R. Comfort, 2102 Reynolds Lane, Louisville, Ky., secretary-treasurer.

LOUISIANA—New Orleans Veterinary Medical Association, the third Thursday of every month at the Monteleone Hotel, New Orleans, at 8:30 p.m. Ronald C. Francis, 6421 Chef Menteur Highway, New Orleans, La., secretary-treasurer.

MARYLAND—Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m., at the Park Plaza Hotel, Charles and Madison St., Baltimore, Md. Leonard D. Krinsky, 6111 Hartford Rd., Baltimore, Md., secretary.

MICHIGAN—Central Michigan Veterinary Medical Association, the first Wednesday of every month at 7 p.m. Jerry Fries, 2070 E. Main St., Owosso, Mich., secretary.

Mid-State Veterinary Medical Association, the fourth Thursday of each month with the exception of November and December. Robert W. Acton, 4110 Spring Rd., Jackson, Mich.

Saginaw Valley Veterinary Medical Association, the last Wednesday of each month. Alvin R. Conquest, P.O. Box 514, Grand Blanc, Mich., secretary.

Southeastern Michigan Veterinary Medical Association, the fourth Wednesday of every month, September through May. Louis J. Rossoni, 24531 Princeton Ave., Dearborn 8, Mich., secretary.

MISSOURI—Greater St. Louis Veterinary Medical Association, the first Friday of each month (except July and August), at the Coronado Hotel, Lindell Blvd. and Spring Ave., St. Louis, Mo., at 8 p.m. Edwin E. Epstein, 4877 Natural Bridge Ave., St. Louis 15, Mo., secretary.

Kansas City Veterinary Medical Association and Kansas City Small Animal Hospital Association, the third Thursday of each month at the Hotel President, Kansas City, Mo. Robert E. Guilfoil, 18 N. 2nd St., Kansas City 18, Kan., secretary.

NEVADA—Western Nevada Veterinary Society, the first Tuesday of each month. Paul S. Silva, 1170 Airport Road, Reno, Nev., secretary.

NEW JERSEY—Central New Jersey Veterinary Medical Association, the second Thursday of November, January, March, and May at Old Hights Inn, Hightstown, N. J. David C. Tudor, R.D. 1, Box 284A, Cranbury, N. J., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from October through April, except December, at the Irvington House, 925 Springfield Ave., Irvington, N.J. Bernard M. Weiner, 787 Clinton Ave., Newark, N.J., secretary.

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Tuesday of each month at the Elks Club, Hackensack. James R. Tanzola, Upper Saddle River, N.J., secretary.

Northwest Jersey Veterinary Society, the third Wednesday of every odd month. G. L. Smith, P.O. Box 938, Trenton, N.J., secretary.

South New Jersey Veterinary Medical Association, the fourth Tuesday of each month at the Collmont Diner, Collingswood, N.J. Marvin Rothman, 718 Dwight Ave., Collingswood, N.J., secretary.

NEW MEXICO—Bernalillo County Veterinary Practitioners Association, the third Wednesday of each month, Fez Club, Albuquerque, Donald W. Fitzgerald, 1825 Lomas Blvd., N.E., Albuquerque, N.M., secretary-treasurer.

NEW YORK—New York City, Inc., Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

Monroe County Veterinary Medical Association, the first Thursday of even-numbered months except August. Irwin Bircher, 50 University Ave., Rochester, N. Y., secretary.

NORTH CAROLINA—Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel, Greensboro. C. G. Sims, 2450 Battleground Ave., Greensboro, N. Car., secretary.

Eastern North Caroline Veterinary Medical Association, the last Tuesday evening of each month, time and place specified monthly. Byron H. Brow, Box 453, Goldsboro, N. Car., secretary-treasurer.

Piedmont Veterinary Medical Association, the last Friday of each month. J. G. Martin, Boone, N. Car., secretary.

Twin Carolinas Veterinary Medical Association, the third Friday of each month at Orange Bowl Restaurant, Rockingham, N. Car., at 7:30 p.m. J. E. Currie, 690 N. Leak St., Southern Pines, N. Car., secretary.

Western North Carolina Veterinary Medical Association, the second Thursday of every month at 7:00 p.m. in the George Vanderbilt Hotel, Asheville, N. Car. Vivu Lind, 346 State St., Marion, N. Car., secretary.

OHIO—Cincinnati Veterinary Medical Association, the third Tuesday of every month at Shuller's Wigwam, 6210 Hamilton Ave., at North Bend Road. G. C. Lewis, 451 E. Galbraith Rd., Cincinnati, Ohio, secretary-treasurer.

Columbus Academy of Veterinary Medicine, every month, September through May. E. M. Simonson, 3120 Valley View Dr., Columbus, Ohio, secretary-treasurer.

Cuyahoga County Veterinary Medical Association, the first Wednesday in September, October, December, February, March, April and May, at 9:00 p.m. at the

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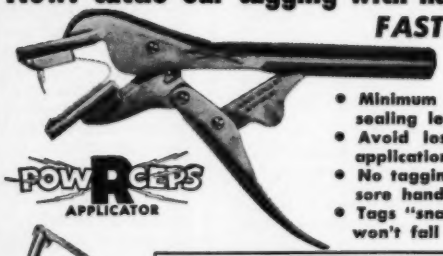

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Carter Hotel, Cleveland, Ohio. F. A. Coy, 8208 Carnegie Ave., Cleveland, Ohio, secretary.

Dayton Veterinary Medical Association, the third Tuesday of every month. O. W. Fallang, 6941 Far Hills Ave., Dayton, secretary.

Geauga County Veterinary Medical Society, the third Wednesday of each month, at the Manor House, Newberry, Ohio, at 1:00 p.m. Peter J. Clemens, Jr., R. D. 2, Chagrin Falls, Ohio, secretary.

Killbuck Valley Veterinary Medical Association, the first Wednesday of alternate months beginning with February. C. Gale, Wooster, Ohio, secretary-treasurer.

Mahoning County Veterinary Medical Association, the Fourth Tuesday of each month, at 9:00 p.m. Youngstown Maennerchor Club, Youngstown, Ohio. Sam Segall, 2935 Glenwood Ave., Youngstown, secretary.

Miami Valley Veterinary Medical Association, the first Wednesday of December, March, June, and September. J. M. Westfall, Greenville, Ohio, secretary-treasurer.

North Central Ohio Veterinary Medical Association, the last Wednesday of each month except during the summer. R. W. McClung, Tiffin, Ohio, secretary-treasurer.

Northwestern Ohio Veterinary Medical Association, the last Wednesday of March and July. C. S. Alvanos, 1683 W. Bancroft St., Toledo, Ohio, secretary-treasurer.

Stark County Veterinary Medical Association, the second Tuesday of every month, at McBrides Emerald Lounge, Canton, Ohio. M. L. Willen, 4423 Tuscarawas St., Canton, Ohio, secretary.

Summit County Veterinary Medical Association, the last Tuesday of every month (except June, July, and August), at the Mayflower Hotel, Akron, Ohio. M. L. Scott, 42 W. Market St., Akron, Ohio, secretary-treasurer.

Tri-County Veterinary Medical Association, the fourth Wednesday of January, May, and September. Mrs. R. Slusher, Mason, Ohio, secretary-treasurer.

OKLAHOMA—Oklahoma County Veterinary Medical Association, the second Wednesday of every month, 7:30 p.m., Patrick's Foods Cafe, 1016 N.W. 23rd St., Oklahoma City. Claude A. Tigert, 3032 N.W. 68th St., Oklahoma City, Okla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month at the City-County Health Building, 4616 E. 15th St., Tulsa, Okla. Arlen D. Hill, 5302 E. 11th St., Tulsa, Okla., secretary.

Tulsa Association of Small Animal Veterinarians, first and third Mondays. City-County Health Dept. T. E. Messler, 3104 E. 51st St., Tulsa, Okla., secretary.

OREGON—Portland Veterinary Medical Association, the second Tuesday of each month, at 7:30 p.m. Ireland's Restaurant, Lloyds, 718 N.E. 12th Ave., Portland. Donald L. Moyer, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Willamette Veterinary Medical Association, the third Tuesday of each month, except July and August, at the Marion Hotel, Salem. Robert J. Mallorie, P.O. Box 155, Silverton, Ore., secretary.

PENNSLYVANIA—Keystone Veterinary Medical Association, the fourth Wednesday of each month at the University of Pennsylvania School of Veterinary Medicine. Raymond C. Snyder, N.E. Corner 47th St. and Hazel Ave., Philadelphia 43, Pa., secretary.

Lehigh Valley Veterinary Medical Association, the first Thursday of each month. Stewart Rockwell, 10th and Chestnut Sts., Emmaus, Pa., secretary.

Pennsylvania Northern Tier Veterinary Medical Association, the third Wednesday of each odd numbered month. R. L. Michel, Troy, Pa., secretary.

SOUTH CAROLINA—Piedmont Veterinary Medical Association, the third Wednesday of each month at the Fairforest Hotel, Union, S. Car. Worth Lanier, York, S. Car., secretary.

Georgia-Carolina Veterinary Medical Association—see GEORGIA.

TEXAS—Coastal Bend Veterinary Association, the second Wednesday of each month. Jack E. Habluetzel, Route 1, Box 65-N, Ingleside, Texas, secretary.

Dallas County Veterinary Medical Association, the first Tuesday of each month at 7:30 p.m., at a place to be specified. Frank N. Black, 12830 Preston Rd., Dallas, Texas, corresponding secretary.

UTAH—Salt Lake Small Animal Hospital Association, the first Monday of every month, at the Holiday Inn, 3040 South State St., Salt Lake City, at 12:15 p.m. Douglas H. McKelvie, 1220 S. State St., Salt Lake City, Utah, secretary-treasurer.

(*Continued on adv. p.* 54)

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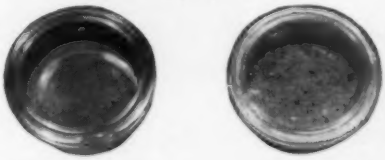

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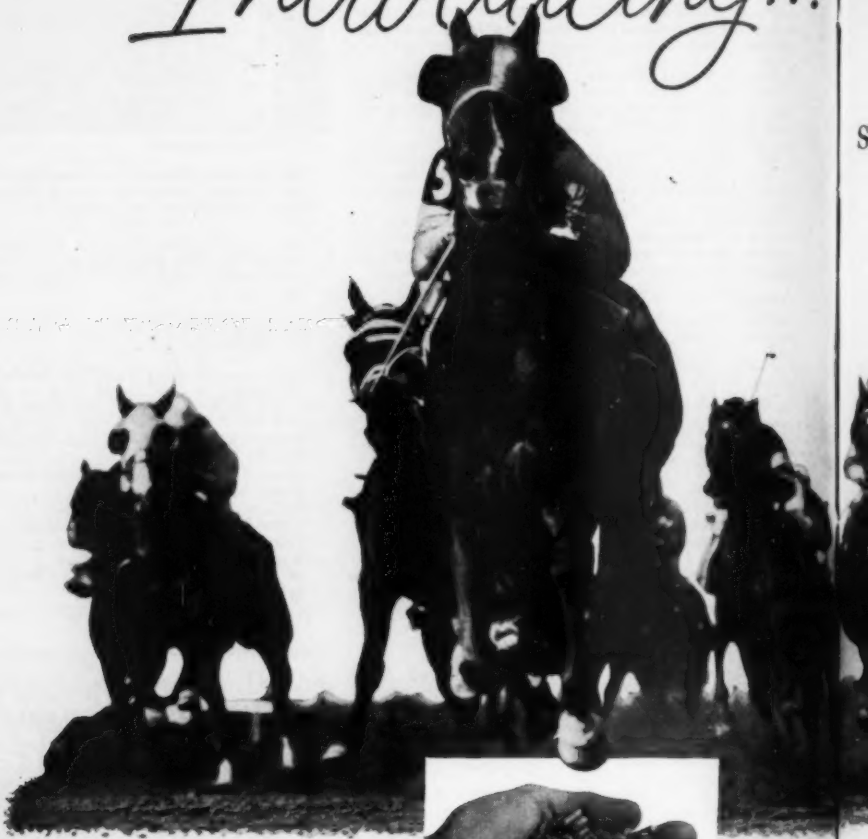

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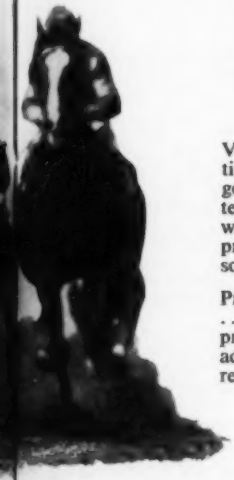

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VIRGINIA—Central Virginia Veterinary Association, the second Thursday of each month at 8:00 p.m., except July and August, at a place in Richmond to be announced monthly. Edwin M. Crawford, secretary-treasurer.

Northern Virginia Veterinary Conference Association, the second Tuesday of each month. T. P. Koudelka, P.O. Box 694, Harrisonburg, Va., secretary.

Northern Virginia Veterinary Society, the second Wednesday of every third month. Meeting place announced by letter. H. C. Newman, Box 145, Merrifield, secretary.

Southwest Virginia Veterinary Medical Association, the first Thursday of each month. D. F. Watson, Blacksburg, secretary.

WASHINGTON—Seattle Veterinary Medical Association, the third Monday of each month, Magnolia American Legion Hall, 2870 32nd W., Seattle. Roy C. Toole, 10415 Main St., Bellevue, secretary.

South Puget Sound Veterinary Association, the second Thursday of each month except July and August. B. D. Benedictson, 3712 Plummer St., Olympia, Wash., secretary.

WEST VIRGINIA—Kyowva (Ky., Ohio, W. Va.) Veterinary Medical Association, the third Thursday of each month in the Hotel Pritchard, Huntington, W. Va., at 8:30 p.m. Harry J. Fallon, 200 5th St., W. Huntington, W. Va., secretary.

WISCONSIN—Central Wisconsin Veterinary Medical Association, the second Tuesday of each quarter (March, June, Sept., Dec.) C. R. Carlson, 1109 E. LaSalle Ave., Barron, Wis., secretary.

Coulee Region Veterinary Medical Association, the third Wednesday of every other month. F. N. Petersen, Box 127, Cashton, Wis., secretary.

Dane County Veterinary Medical Association, the second Thursday of each month. Dr. E. P. Pope, 409 Farley Ave., Madison, Wis., secretary.

Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. Dr. Raymond Pahle, 10827 W. Oklahoma Ave., Milwaukee, Wis.

Northeastern Wisconsin Veterinary Medical Association, the third Wednesday in April. William Madson, 218 E. Washington St., Appleton, Wis., secretary.

Rock Valley Veterinary Medical Association, the first Wednesday of each month. L. C. Allenstein, 209 S. Taft St., Whitewater, Wis., secretary.

Southeastern Veterinary Medical Association, the third Thursday of each month. John R. Curtis, 419 Cook St., Portage, Wis., secretary.

Wisconsin Valley Veterinary Medical Association, the second Tuesday of every other month. John B. Fleming, 209 E. 4th St., Marshfield, Wis., secretary.

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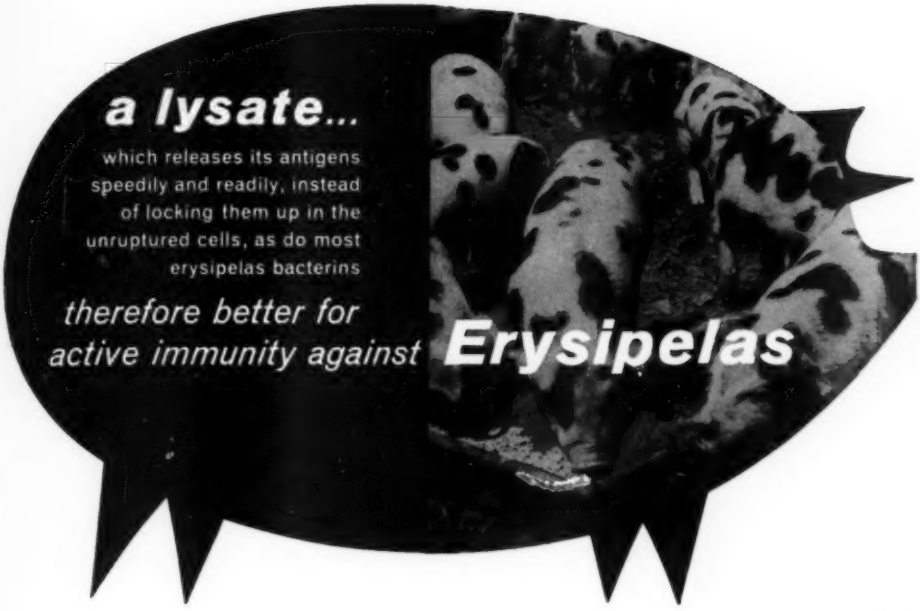
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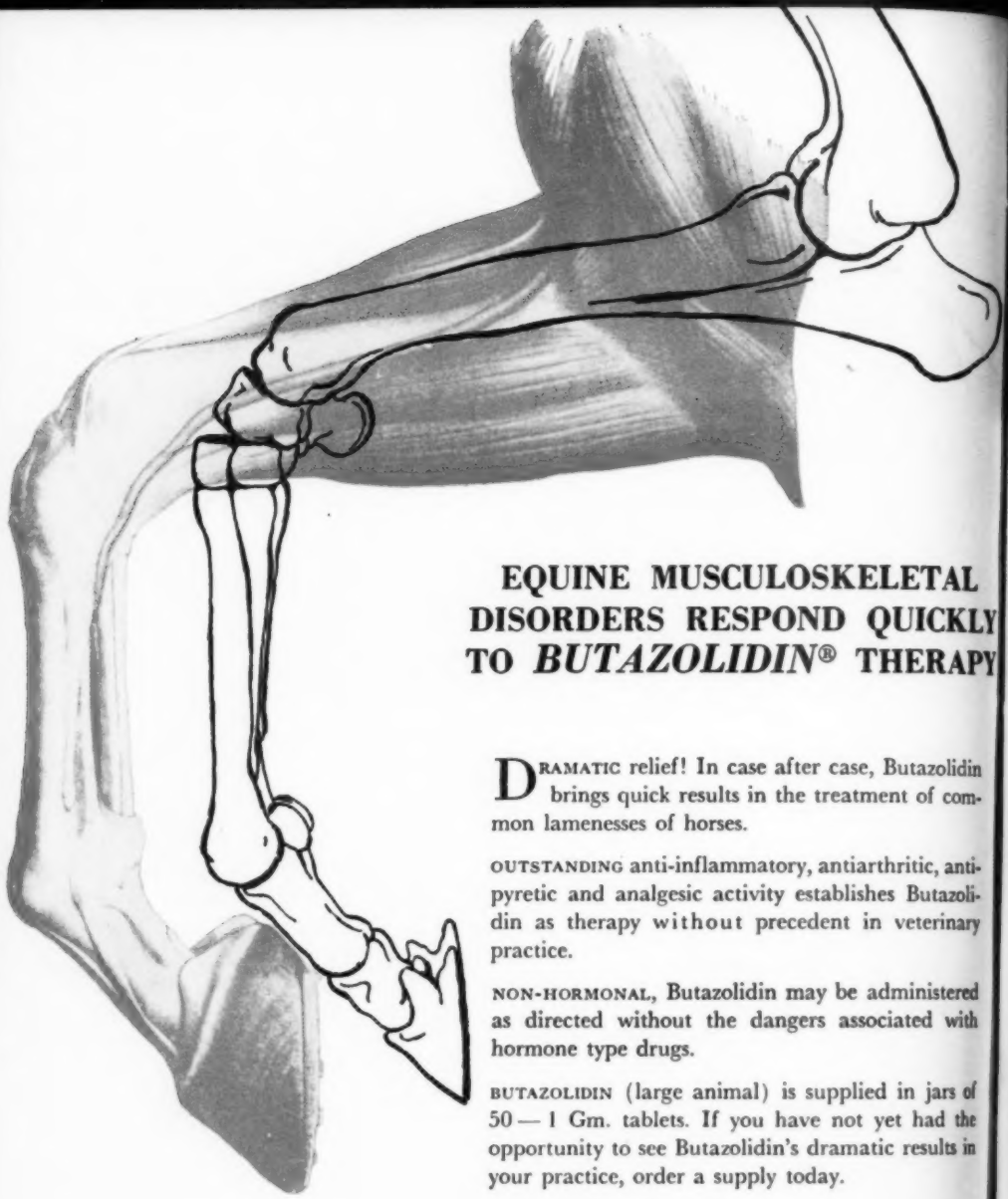

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